UNIVERSITY OF CALIFORNIA

Santa Barbara

An Evaluation of the *Social Emotional Health Survey-Secondary* for Use with Students with Learning Disabilities: Confirmatory Factor Analysis, Measurement Invariance, and Comparative Analyses

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Counseling, Clinical and School Psychology

by

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June 2017

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To my father, John Joseph Carnazzo, who knew my calling long before I did, and worked tirelessly to ensure that I heard it someday too. All that I do is in memory and in honor of you.

ACKNOWLEDGEMENTS

This manuscript, and the work and passion that it represents, is dedicated to my parents, John and Sandra, who were determined to offer me the gift of an incredible education and taught me the joy and fulfillment that comes from both doing well and doing good.

My deepest gratitude to the rest of my village: To my siblings, Anthony and Cristina, for cheering me every step of the way, and generously sharing their infinite love and wisdom. To my oldest and dearest friend, Cassie, who has been an integral part of this experience, walking every step with me and offering her energy and faith when I had little. To Billy, for his patience and unconditional love at such a critical time in my life and career, and for his tireless support and unfaltering belief in me. To Heidi, who gave me this whole idea in the first place, and to Jon, for his example and mentoring as an academic and friend. To my friends and colleagues at UCSB, especially Avery, Sissi, and Kayleigh. I am honored by your friendship, privileged to work alongside you, and forever indebted to you for sharing your knowledge, your passion, and your camaraderie.

Finally, my sincerest appreciation to my committee and most especially my advisor, Dr. Erin Dowdy, without whom I would have been lost in this maze of graduate school. She has pushed me to new depths and challenged me to grow and progress, all while maintaining a caring sense of support and nurturing, sharing in my joys and triumphs as well as guiding me through the challenges. Thank you for all you have done on my behalf.

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ABSTRACT

An Evaluation of the *Social Emotional Health Survey–Secondary* for Use with Students with Learning Disabilities: Confirmatory Factor Analysis, Measurement Invariance, and Comparative Analyses

by

Katherine Wynn Carnazzo

As the fields of psychology and education increasingly move from a deficit-based, medical model toward a strengths-focused model, researchers and practitioners are in need of measures with adequate psychometric properties to assess personal strengths. Students with learning disabilities (LD) represent a vulnerable population and one that is at a higher risk for social, emotional, and behavioral challenges compared to their peers without LD. As the effects of LD are not confined to childhood or the school setting, and often affect people throughout their lives, a strengths-based orientation is recommended to encourage building strengths and resilience factors to counteract the negative effects of LD over the lifespan. Therefore, identifying and focusing on the building of strengths, adaptive skills, and personal assets, while important for all youth, is especially important for youth with LD. In order to identify areas of strength and areas for growth, measurement tools that are appropriate for the population of students with LD are needed. This study examined the psychometric properties of one measure, the Social Emotional Health Survey–Secondary (SEHS–S), for use with

students with LD. Specifically, data from three secondary schools was used to confirm the existing factor structure of the SEHS–S measurement model, establish measurement invariance across LD and non-LD groups, and compare the social-emotional profiles of students with and without LD. The LD group was found to report lower overall social emotional strengths than their non-LD peers, with some variation across the subdomains measured. Implications for practitioners and researchers will be discussed.

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An Evaluation of the *Social Emotional Health Survey–Secondary* for Use with Students with Learning Disabilities: Confirmatory Factor Analysis, Measurement Invariance, and Comparative Analyses

I. Literature Review

Introduction

The fields of education and psychology are both in the midst of an important paradigm shift from a deficit oriented, medical model of identifying youth with mental health concerns, to a strengths-based effort towards prevention and early intervention for mental health and well-being. When compared to deficit-based approaches, strengths-based orientations (those that focus on the positive resources and assets that youth possess) show more promising results and clients report more commitment to change as a result of their use (Cox, 2006). Researchers and practitioners, coupled with meaningful legislation (California's Mental Health Services Act, 2005; Children's System of Care Initiative, 1994; Cox, 2006) are successfully, incrementally moving the fields towards a strengths-based model. Schools that are not just instructing in reading, writing, and math, but are also simultaneously enhancing students' social and emotional strengths and assets, are contributing to an overall better environment in which to learn (Greenberg et al., 2003).

An increased focus on student strengths is particularly beneficial for students with school challenges in the form of specific learning disabilities (LD). LDs have biological bases in the central nervous system (CNS), though isolated causal neurological components

have not been identified. This means that a LD is not something people will outgrow, rather, they will ideally adapt and cope. Therefore, identifying and focusing on the building of strengths, adaptive skills, and personal assets, while important for all youth, is especially important for youth with LD (Morrison & Cosden, 1997). In order to effectively enhance student strengths, educators need a systematic measure for gathering data about the social emotional strengths of their students, to identify areas of need, and determine where prevention and intervention efforts may be useful. One recently developed measure designed to assess personal strengths and assets is the Social Emotional Health Survey–Secondary (SEHS–S). However, prior to recommending its use for students diagnosed with LD, further validation of its use with the population of students with LD is needed.

The present study sought to contribute to the literature investigating strengths-based assessments for students with disabilities. In particular, the following study examined the measurement equivalence of the Social Emotional Health Survey–Secondary (SEHS-S) across groups of LD and non-LD secondary students, to determine its appropriateness for use with this population of students. This study then compared the social emotional strength profiles of students with and without LD. Results of this study will contribute to the psychometric literature for this strengths-based measure, to enhance its applicability and use with students with LD.

Statement of the Problem

The measurement of student strengths is a desirable, effective, less stigmatizing way to gauge student social emotional functioning in order to intervene in a positive way (Cox, 2006). In particular, educators desire to pay attention to the most vulnerable groups of students, such as those with LD who experience significant failure in school (Idan &

Margalit, 2009; Terras, Thompson, & Minnis, 2009). In order to develop effective interventions, practitioners need to utilize measures with sufficient reliability and validity evidence to support score inferences for the LD population. To do so, an examination of measurement invariance is necessary with any tool being considered for use with a population of students not originally examined during the scale creation and initial validation studies. This study will introduce and describe the population of students with LD, the rationale supporting the strengths-based approach, and examine the psychometric properties of a scale that holds promise for gathering important information to equip students with LD with the coping skills and strengths to be successful in school and beyond.

Students with Specific Learning Disability (LD)

The term "LD" is an inconsistently applied term. Identification procedures vary by district and state, and there is no formulaic method for determining classification of LD, and therefore the LD group is extraordinarily diverse (Johnson, Humphery, Mellard, Woods, & Swanson, 2010). Nevertheless, it represents a large category of students that exists in our current education system. LD is a diagnosis that defines children's lives, and it is critical to address the needs of these students. The current study operationalized LD categorization as students who have active individualized education plans (IEPs) under which they meet the qualifications for a *specific learning disability*.

Definition and Identification of LD

Of the 13 Individuals with Disabilities Education Act (IDEA; 2004) disability categories under which a student can qualify for special education services, the category of LD is by far the largest. The total population of students with diagnosed disabilities totals 5.7 million American students, and 42% of those students qualify under the classification of LD

(Cortiella & Horowitz, 2014). This represents a significant population of students with unique needs. One of the most challenging aspects of conducting research on students with (LD) is that the definitions and classification methods are flawed (Buttner & Hasselhorn, 2011; Kavale, Spaulding, & Beam, 2009; Scanlon, 2013). Most agree on the core conceptualization of "learning disability"; LD refers to an academic-based disorder, originating in the CNS, that is associated with processing difficulties that are significantly different from typically developing peers (Buttner & Hasselhorn, 2011; Johnson et al., 2010). However, the specific processing behaviors and neurological components, as well as measurement and assessment for LD, are still widely debated, continually evolving subjects. Even as recently as this past calendar year, the state of California enacted a law (A.B. 1369) adding "phonological processing" to the identification process for LD diagnosis. This law requires support programming for teachers and special education staff in how to assess and instruct students with dyslexia (often referred to as a reading disorder), one of the most common LD foci, by the 2017-2018 academic year (Adams, 2015). Yet, in other domains, researchers question the existence of LD, wondering if instead it is merely a reflection of context and the structure of our educational system (Skrtic, 2005). Scanlon's 2013 discussion of the updated LD definition generated by the American Psychiatric Association (APA) articulates the controversy well. He acknowledges that there are differences of opinion across which processing behaviors define a LD and the associated neurological structures. Scanlon also acknowledges the hesitations of some researchers that LD is not substantially different from a low intelligence quotient (IQ) and low achievement.

Some consensus does exist, however, and the relevant core features have remained relatively unchanged over time. The traditional, federally directive definition was penned in

1968 by the National Advisory Committee on Handicapped Children (NACHC, 1968) and has not been meaningfully updated since (Kavale et al., 2009). The original definition does reflect the core conceptualization, albeit vaguely: "The term 'learning disability' means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written which disorder may manifest itself in an imperfect ability to listen, think, speak, write, spell, or do mathematical calculation (P.L. 108-466, Sec. 602[30])." APA has attempted an updated operational definition of the disability in the most recent version of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V; APA, 2013), though it is of little practical use to educators who are bound by the federal definition under IDEA.

Since there is still no widespread agreement on the underlying neurological causes, the updated definition favors academic performance in three key areas as indicators of a problem; that is, this disorder must result in challenges in the key academic areas of reading, writing, and/or math in order for an LD diagnosis to be given (APA, 2013). The DSM definition is similar to the definition put forth by the International Classification System (ICD-10; World Health Organization, 1992), which describes LD as a specific developmental disorder of scholastic skills, and differentiates developmental dyslexia (reading disorder) from dyscalculia (disorder of math) and specific spelling disorder.

Confining the diagnostic criteria to the academic setting is necessary, yet limiting. It is necessary in that the manifestations of an underlying CNS disorder are most often assessed and noted in the classroom setting. Interventions can be readily implemented when these processes are tied to specific academic skills, and educators can address the specific manifestations of the disability. It is limiting, however, in that the same neural processes that

contribute to poor understanding of sequential operations in math, as an example, may also contribute to challenges in planning and executing a schedule for getting to work or activities on time (Scanlon, 2013). Scanlon notes, "acknowledging other manifestations [beyond academic content areas] but discounting them in the identification process falsely limits what an LD can be in practice" (Scanlon, 2013, p. 25). Particularly when LD is diagnosed beyond early childhood, the individuals affected may be past the challenges of acquiring basic skills like decoding (which LD definitions tend to focus on), and show higher-level skill difficulties.

Due to the variability and diversity of the manifestations of LD across individuals, assessment and identification of LD becomes a challenging task (Johnson et al., 2010). The traditional model is the determination of an ability-achievement discrepancy, wherein practitioners identify students as LD when their estimated measure of global intelligence is significantly different from their academic performance, and the difference can be explained by some associated processing disorder (Kavale et al., 2009). This model for diagnosing LD has been roundly discredited, with researchers demonstrating variation in who meets the discrepancy criteria depending on the measures used to assess, comparing grade versus age level progress, calculation of the discrepancy by standard-score difference, and calculation using a regression formula (Kavale et al., 2009). At best, the discrepancy method is incomplete and represents only one aspect of LD, yet many have come to view the discrepancy concept as the very definition of LD, and practitioners continue to utilize it, as a more reliable and practically feasible alternative has yet to be widely implemented (Scanlon, 2013).

Response to intervention (RTI) is one alternative method of classifying students as LD should they not respond to progressively more intensive, evidence-based interventions conducted in a general education setting. However, students may qualify using the criteria of one method, but not another, further complicating the picture of what truly constitutes a LD (Johnson et al., 2010). Researchers caution that even the move towards a RTI procedure for classifying LD could result in the same issues that the discrepancy model has, if used exclusively, and recommend further research and discussion to align operational definitions of LD and what the LD categorization is intended to accomplish for students (Johnson et al., 2010).

Despite acknowledgment of the complex issues and growing frustration around the integrity of current practices in diagnosing LD (Kavale et al., 2009), LD remains the largest group of students served under IDEA. Originally intended to represent a categorization of students experiencing challenges in a *specific* area, it has evolved into a catch all for students with learning problems (Kavale et al., 2009). Nevertheless, it remains an important task to address issues of LD, despite the inconsistencies and many practical limitations, in order to move the field forward for students experiencing such challenges in school.

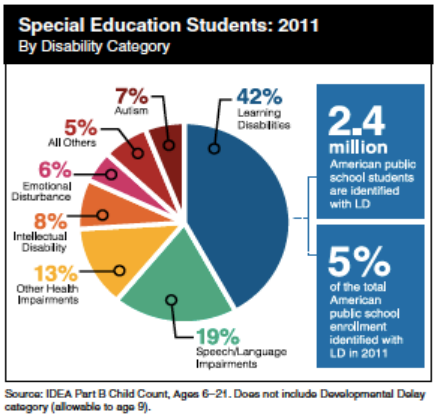

Figure 1. Disability categories in the United

Characteristics of Students with LD

The population of students with LD currently represents approximately 2.4 million public schoolchildren (Figure 1). Two-thirds of students with LD are male, despite the relatively even populations of males and females in overall enrollment in American public schools. The overrepresentation of males persists across ethnic and racial

groups (Oswald, Best, Coutinho, & Nagle, 2003). Though similar numbers of males and females exhibit reading problems—a hallmark of LD—there are more boys referred for assessment and subsequently classified as LD (Oswald et al., 2003). Multiple hypotheses attempt to explain the gender disparity, though no systematic explanation has been determined. Some argue that boys exhibit a biological vulnerability to complications during pregnancy and higher rates of genetic abnormalities (Oswald et al., 2003). Alternatively, researchers cite boys' slower maturation as a reason for higher referral rates (Oswald et al., 2003). Others fault the teacher referral process itself and indications of teacher bias, concluding that the overrepresentation of males may be due to (stereotypical) behavioral differences between boys and girls rather than prevalence of LD, as boys are more likely to exhibit externalizing behavior problems (Shaywitz, Towle, Keese, & Shaywitz, 1990). Externalizing behaviors that disrupt classroom activities are more likely to garner a teacher's attention, reflecting the notion of the "squeaky wheel." This hypothesis is in part supported by more recent research that demonstrates that teachers were *most* likely to refer students who had a combination of low achievement *and* behavioral struggles, rather than low achievement on its own (MacMillan, Gresham, Lopez, & Bocian, 1996). While the foundational reasons remain unclear, discovering why the gender disparity exists is an important area for further research, as well as a caution in interpreting research of LD populations, in that much of the reported data disproportionately reflects the experiences of males.

Gender is not the only disparity that exists when examining the population of students with LD. Minority populations have historically been disproportionately qualified for special education services (U.S. Department of Education, 2009). Specifically, Black and Latino/a

students have been overrepresented in the LD population, while White and Asian students have been underrepresented, though these disparities now appear to differ by state. For example, the most recent numbers indicate that in California, where 11.2% of the student enrollment is Asian, just 3% of students qualifying as learning disabled are Asian (Cortiella & Horowitz, 2014). However, Latino/a students were not found to be meaningfully overrepresented in special education as LD in California, though popular rhetoric assumes this disparity (Perez, Skiba, & Chung, 2008). In other states, however, overrepresentation of Latino/a students qualifying as LD does exist (e.g. Nebraska; Perez et al., 2008).

Students who qualify for special education are considered vulnerable populations on their own, and adding increased complexity is that other vulnerable populations overlap significantly with the group of students with LD. For example, students with LD are more likely to be from low-income households (poverty is already considered a significant risk factor for poorer academic outcomes). It is also more likely that students with LD are in foster care or homeless, which means that due to the inconsistency of home and school placements, they may often not receive consistent special education services for which they are eligible (Cortiella & Horowitz, 2014). Students with LD are also likely to be diagnosed with comorbid disorders such as emotional/behavioral disorders and attention-deficit hyperactivity disorder (ADHD; Buttner & Hasselhorn, 2011). The students that are most at risk are typically those that are experiencing multiple risk factors, and so these overlapping vulnerabilities are of concern (Wiener, 2003). In sum, the LD student population represents a vulnerable group of American schoolchildren that Steele (1997) has termed an "ability-stigmatized" group, at greater risk for academic, behavioral, and social failure.

Outcomes for Students with LD

It is clear that youth with LD are a vulnerable group of students. This is due, in part, to the negative short- and long-term outcomes associated with school failure (e.g., Moretti, 2005; Muennig, 2005; Rouse, 2005), and in part because LD is associated with a range of other challenges for students (such as planning, scheduling, and other executive functioning tasks; Scanlon, 2013). Like the population itself, however, outcomes for students with LD are varied in the research. Statistics differ from state to state with regard to educational outcomes, but the generally consistent finding is that LD students in special education have poorer academic outcomes than their general education peers, and that this academic achievement gap widens each year that students are in school (Spaulding, 2010). A qualification of LD decreases the likelihood that a student will graduate from high school, and increases the chances of a student dropping out (Spaulding, 2010; Truscott et al., 2005). There is an overrepresentation of both individuals with LD and individuals who have dropped out of high school in both juvenile and adult incarceration (Annamma, 2014; Quinn, Rutherford, Leone, Osher, & Poirier, 2005).

The pattern of low academic achievement in students with LD is of concern. Elbaum and Vaughn (2003) found that for students with LD, self-perceptions of academic competence were highly correlated with their sense of self-concept. That is, how students with LD see themselves academically is strongly correlated with how they feel about themselves globally, which influences their choices about their future. This sense of self-efficacy is important: what students believe about their abilities and what they are capable of accomplishing will affect their life choices (Lackaye & Margalit, 2006). Adolescents with LD who possess more positive self-perceptions related to school are more likely to work harder, use the strategies taught to them, and be rated more positively by their teachers on

work ethic and academic performance (Margalit, 2004). This finding supports the idea of assessing for self-efficacy and self-esteem, and subsequently intervening with students based on their social-emotional functioning with the intention of improving self-concept.

Since LDs are most often studied in the context of a teacher and classroom, as the hallmark is academic difficulty, there is a notable research gap when it comes to understanding and examining how students with LD function with respect to more global outcomes (Wiener, 2003). This includes peer relationships, familial dynamics, and general social emotional functioning. Social deficits can be found as early as preschool, when, as a group, students later diagnosed as having a LD displayed poorer social-information processing skills compared to their peers without a similar diagnosis (Margalit, 2004). Confounding evidence exists regarding the later peer relationships of students with LD. Some researchers have found that children with LD are more likely to be victimized by their peers (Wiener, Harris, & Shirer, 1990), while others note that this effect may depend on special education placement (whether in inclusion or separate pullout programs). Elbaum (2002) described an individual's sense of self-esteem as related to whomever the student uses as a "reference" or peer group. Therefore, if a student's reference group for most of their day is made up of other students with LD, a student is likely to have a higher sense of self-concept compared to a reference group of general education students, particularly since similarity is such an important component of friendship (Schneider, Wiener, & Murphy, 1994). Still, another argument has been presented through research demonstrating that students with LD who are in inclusion model classrooms with general education peers as a reference group report more social acceptance, a higher number of friends, less loneliness and depression, and improved social skills (Wiener & Tardif, 2004). Classroom

environments vary greatly, likely accounting for children's differing experiences across contexts. With respect to more general social-emotional functioning, youth with LD tend to endorse less secure patterns of relationships with caregivers than their peers, which is associated with social and emotional maladjustment (Bowlby, 1969; Margalit, 2004).

Additionally, research demonstrates that it is not just one risk factor, but the sum of many, that contributes to negative outcomes (Sameroff, Seifer, Baldwin, & Baldwin, 1993). When a multiple environmental risk score is calculated by summing the number of risk factors in a child's environment, a relation emerges between higher cumulative risk factors and increased psychiatric distress as well as depressed IQs. When a child experiences multiple risks from a "pool" of risk factors (i.e., parental marital distress, low SES, large family size, experience as foster youth, etc.), regardless of the pattern of risk factors, cumulatively more risk placed the children in a higher psychiatric distress and lower IQ category. More specifically, Sameroff and colleagues determined that the average IQ for a child with no risk factors was 118, while the average IQ for children with the highest quantity of risk factors (7-8 risk factors), no matter what the risk factors were, was 85 (Sameroff et al., 1993). Another study examined behavior problems in youth, and found that just 7% of children who experienced less than two risk factors also exhibited behavior problems. However, for a sample of children experiencing eight or more risk factors (again, regardless of *which* eight), 40% exhibited behavior issues. This study concluded that different patterns of risk factors can result in similar outcomes (Williams, Anderson, McGee, & Silva, 1990). Therefore, students with LD who also incur other risk factors—for example, as victims of bullying, a minority status, low socioeconomic status (SES), homeless children or those in foster care—are at highest risk (Wiener, 2003). Also, differences reported in the

literature base could, in part, be due to the fact that special education models and resource instruction itself varies widely from school to school (Truscott et al., 2005). Despite these differences and conflicting empirical findings, a diagnosis of LD is a risk factor. As students with LD are not able to access education without supports, and as their disability often spills over into other parts of their lives (Scanlon, 2013), they warrant close attention and purposeful instruction and interventions across contexts. One aspect of effective LD intervention involves addressing the area of social-emotional health. This study will closely examine a strengths survey to ascertain its appropriateness for use with an LD population.

Measuring Students' Strengths

The traditional model of measuring youths' social and emotional well-being focuses on identifying their deficits—what is wrong with a student and how can educators fix it. There are numerous problems with this deficit-based model. First, students must endorse reasonably high levels of distress in order to be flagged as needing additional services on a typical social-emotional assessment tool. Not all students in need of services will present as having mental health distress symptoms, but may nevertheless be "languishing," or not thriving and meeting their full potential (Keyes, 2002). Second, this model does little to inform widespread prevention efforts. A strengths-based prevention and intervention model is a less stigmatizing approach towards mental health (Cox, 2006), and therefore often a much more palatable option for schools, who may be hesitant to assess for and identify mental health challenges such as depression and anxiety. Research has demonstrated that a strengths-based focus in assessment might alleviate some of the discomfort of assessment for parents and teachers (LeBuffe & Shapiro, 2004). Strengths-focused assessments allow school staff to identify students who may benefit from increased support services, but who are not

necessarily reporting high distress. Additionally, educators can identify students who may benefit from added support and who may be at-risk for the development of later mental health issues as challenges arise in their lives. In that manner, educators can target intervention towards them by building their existing assets.

This strengths-based discussion uses personal "strengths" and promotive "assets" to refer to internal factors, such as self-esteem, empathy, and communication, as well as external factors like the quality of supportive relationships at home and at school (Furlong, You, Renshaw, Smith, & O'Malley, 2013). Educators are committed to equipping their students with strategies and coping skills, and the building of personal strengths and promotive factors aids in this goal. An extensive meta-analysis conducted by Wang, Haertel, and Walberg (1997) identified the most significant influences on learning. Among the top influences, many could be categorized as related to social-emotional strengths: parental support, student-teacher social interaction, the peer group, social-behavioral attributes, and motivational-affective attributes. In more recent research, Scales and colleagues (2006) have continued to support the theory of "cumulative assets" by demonstrating that school success increases when action is taken to strengthen multiple developmental assets simultaneously, rather than seeing each intervention or prevention effort as separate from one another and attempting to improve one single skill. Greenberg and colleagues (2003) reviewed research showing the success of school prevention programming that reflects a cumulative assets framework, that "simultaneously enhances students' personal and social assets" (p. 467) and issued a resounding call for this kind of programming from preschool to high school. Lenzi and colleagues have recently extended the cumulative assets framework to demonstrate that both the quantity and variety of personal strengths serves as protective against behavioral and

emotional problems, as well as protective against the experience of both physical and relational victimization at school (Lenzi, Dougherty, Furlong, Sharkey, & Dowdy, 2015; Lenzi, Furlong et al., 2015).

A composite of all strengths factors is a more accurate predictor of successful outcomes and prosocial behavior than any single strength's unique contribution; therefore, increasing any one factor will impact the overall sum, regardless of *which* strength is increasing (Margalit, 2004; Scales et al., 2006). Particularly in students diagnosed with LD (the focus of the current study), any one protective factor seems insufficient to compensate for the challenges associated with LD. Instead, the development of multiple strengths across many areas of adaptive functioning is preferable (Margalit, 2004).

Current Strength-Based Measures

There are some existing measurement tools to assess youths' beliefs about themselves and their sense of support from others and perception of their world from a strengths-based perspective. Several assessment tools that are also grounded in a strengths-based framework and that measure some similar components include the *Multidimensional Students' Life Satisfaction Scale* (MSLSS; Huebner, 1994), the *Student's Life Satisfaction Scale* (SLSS; Huebner, 1991), and the *Social and Emotional Assets and Resilience Scales* (SEARS; Merrill, 2011). The MSLSS is a 40-item survey that was designed as a response to the increasing interest in promoting positive psychological traits for social and emotional health. It includes five subscales: Family, Friends, School, Living Environment, and Self. This 40-item survey is available for professional use, and has evidence of adequate internal consistency (alpha coefficients range from .70 to .90; Greenspoon & Saklofske, 1997; Huebner, 1994; Huebner, Laughlin, Ash, & Gilman, 1998) and test-retest reliability at two-

and four-week time periods (.70 - .90; Huebner et al., 1998). Prior analyses have confirmed the five-factor structure, but the survey has not been validated for use with diverse populations of students, such as those with LD, attention deficits, or other special education classifications.

The SLSS is a brief (7-item) scale that inquires about a youth's overall life satisfaction. This scale considers a child's global perspective on their life, rather than a specific domain, and could be used as a brief, efficient snapshot of how a child is faring. Measures of internal consistency (.82; Huebner, 1991) and test-retest reliability (.74; Huebner, 1991) are good. As is the case with the MSLSS, there is a paucity of psychometric evidence in support of this scale for use with other student populations, including those with LD.

The SEARS (Merrill, 2011) consists of 35 items that measure the following subscales in relation to strengths and resilience factors: Self-Regulation, Social Competence, Empathy, and Responsibility. The SEARS is a more comprehensive system than the brief SLSS, and includes options for a student self-report, teacher report, and parent report. It is also grounded in a strengths-based framework, and aims to evaluate a child's characteristics that are important for success both in and out of school. Psychometric properties of this survey include high internal consistency values (.82 - .93; Nese et al., 2012) and high test-retest reliability (.74 - .92; Nese et al., 2012). One recent study of the SEARS compared students in special education (n = 301) to non-disabled peers (n = 1,372), but did not first test for measurement invariance (Nese et al., 2012). Nevertheless, as expected, students receiving special education services had markedly lower scores on this survey than their non-disabled

peers. The study did not differentiate between qualification categories under special education status, and therefore provided little meaningful information on students with LD.

The Social Emotional Health Survey

There are few assessment surveys that focus on strengths specifically, and there are many personal strength factors that can contribute to positive outcomes for youth. The *Social Emotional Health Survey – Secondary* (SEHS-S; Furlong, You et al., 2013) is grounded in positive psychological constructs that have been shown to be indicators of positive, promotive factors for youth. This survey contains 36 items, each of which load onto one of 12 positive, strength-based constructs. Taken together, these constructs provide a meaningful and thorough understanding of the personal strengths and resilience factors of youth. These constructs in turn load onto one of four first order latent traits, and create an overall strengths score, termed "covitality" (Figure 2). Covitality as an overall measure of student social-emotional well-being will be examined, as well as each of the individual four first order factors: *belief in self, belief in others, emotional competence,* and *engaged living*. Each of the 12 individual constructs comprising these first order factors is reviewed below.

Belief in self. The first of the latent traits is termed *belief in self*, which inquires about a youth's sense of self-awareness, self-efficacy, and persistence with respect to academic tasks. These constructs have been shown in prior research to be positively correlated with success in school and one's vocation, as well as linked to resiliency when facing challenges (e.g., Bassi, Steca, Della Fave, & Vittorio Caprara, 2007; Caraway, Tucker, Reinke, & Hall, 2003; Duckworth, Peterson, Matthews, & Kelly, 2007; Galyon, Blondin, Yaw, Nalls, & Williams, 2012).

Self-awareness. The construct of self-awareness is defined in the literature as the ability to recognize one's own emotions and how those emotions impact behavior, and is named as one of five primary competencies to support prosocial behavior and better adjustment and academic performance (The Collaborative for Academic, Social, and Emotional Learning, 2006). Self-awareness, alongside self-management, social awareness, relationship skills, and responsible decision-making, provides a foundation for more prosocial behaviors, fewer behavioral challenges, and less social-emotional distress (Greenberg et al., 2003). The term self-awareness also refers to an accurate assessment of one's own strengths and difficulties. When students demonstrate self-awareness, they try harder, are better able to set realistic goals for themselves, and are better able to monitor their own learning and progress towards those goals (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Greenberg et al., 2003; Zimmerman, 2008). Students who are self-aware are better able to accept and incorporate feedback, use strategies to learn difficult academic tasks, and recognize when they need support (Zimmerman, 2008). These are especially useful skills in school, particularly as students age into more independent, self-motivated academic settings, such as secondary and post-secondary schools. Particularly for students with LDs, a strong sense of self-awareness helps in seeking out educational and employment opportunities that builds on their true strengths (Morrison & Cosden, 1997).

Self-efficacy. The construct of self-efficacy in relation to students in schools refers to their own beliefs about what they are capable of and what they can do (Schunk & DiBenedetto, 2014). Youth develop ideas about their self-efficacy primarily through personal experience and observation of peers (Schunk & Zimmerman, 1997). When students either experience success, or see a peer succeed, they are more likely to believe that they, too, can

succeed (Schunk & DiBenedetto, 2014). A student's sense of self-efficacy can improve many school-related outcomes, including selection of activities and goal-setting (similar to self-awareness), attitude towards school, performance evaluations from teachers, desire to pursue higher education, and an individual's beliefs that academic pursuits are important (Schunk & DiBenedetto, 2014). Students with high self-efficacy expend more effort (Lackaye & Margalit, 2006) and see difficult tasks as challenges, not threats, and are more willing to persist. The relation is reciprocal in that as school-related outcomes improve, a student's sense of self-efficacy is further reinforced. Therefore, self-efficacy influences behaviors and, in turn, behaviors are affected by self-efficacy beliefs (Schunk & DiBenedetto, 2014).

Persistence. The concept of persistence refers broadly to the ability to stick with a task, in spite of difficulties, in order to achieve a goal. Educators will recognize this quality as one recently termed and popularized as grit (Duckworth et al., 2007). High levels of persistence or grit are linked to academic success, as well as longer-term professional success (Duckworth et al., 2007). In fact, Duckworth and colleagues (2007) argue that grit may be a better predictor of grade point averages for college students than intelligence quotients. The capacity to stick with a task is critical for success, particularly for students with LD, for whom school tasks often prove challenging and more persistence may be necessary to accomplish the task.

Application of the "belief in self" construct to LD. There are many opportunities for educators to affect a student's sense of self-efficacy in school, particularly students with LDs whose own experiences (the most powerful influences on self-efficacy beliefs) are often of failure in school (Scanlon, 2013). If teachers are able to scaffold opportunities for learning and guide students with LD to experience successes with those tasks, self-efficacy may

increase. Researchers note that self-efficacy beliefs must be accurate, because if students are continually overestimating their abilities, and are then continually frustrated, they may lose their motivation to persist (Bandura, 1997). A tool assessing for the constructs of self-awareness, self-efficacy, and persistence would assist educators and students in reflecting on and building these strengths.

Belief in others. The second domain, *belief in others,* assesses an individual's view of their peer support, school support, and family coherence. Similar to the constructs measured through *belief in self*, peer support and school support are positively related to success in school, both socially and academically (Jenkins & Demaray, 2012; Wentzel, 1999). The construct of family coherence describes the feeling of family togetherness and encouragement that is also positively correlated with social emotional health and in addition, positively related to better peer relationships, and decreased bullying behavior (Shetgiri, Lin, Avila, & Flores, 2012).

School support. Wang and colleagues (1997) identify student-teacher social interaction as one of the most significant influences on student learning. The items that contribute to the construct of school support attempt to measure a student's sense of their relationship with their teachers and their connection to the adults at their school overall. Students who endorse high levels of school support do better academically and are more likely to participate in school activities (Gregory & Weinstein, 2004). Teachers and school staff play the most critical role in terms of developing students' sense of school support, and can even help to counteract the effects of low parental support (Stadler, Feifel, Rohrmann, Vermeiren, & Poustka, 2010).

Family coherence. The construct of family coherence measures a student's sense of family togetherness and encouragement and support that a student feels from their family. As mentioned above, parental influence was identified as one of the most significant influences on learning, according to an extensive meta-analysis (Wang et al., 1997). Stability, connectedness, and warm relationships with parents and caregivers are paramount to a child's success at school (Shetgiri et al., 2012). Family factors have been shown to be related to school successes as early as kindergarten, and the influences continue through adolescence (Annunziata, Hogue, Faw, & Liddle, 2006). Family factors have been found to be more predictive of adolescent well-being than peer, school, and neighborhood factors (Anthony & Stone, 2010). Additionally, stability and connectedness in families helps to encourage positive behaviors in youth, including building self-regulation, staying in school, improved peer relationships, and less bullying behavior (Spriggs, Iannotti, Tonja, Nansel, & Haynie, 2007).

Peer support. The domain of peer support describes youths' attachment to their friends and sense of friendship quality. Particularly in adolescence, friendships are a critical part of youths' lives. It is through peer relationships that prosocial behaviors and skills of problem solving, conflict resolution, and provision of emotional support are practiced and honed (Wentzel, Russell, & Baker, in press). Healthy, stable peer relationships provide opportunities for behavioral modeling, wherein the peer group can set expectations for prosocial behavior, reinforce positive behavior patterns, and promote empathy and helping skills (Battistich, Solomon, Kim, Watson, & Schaps, 1995). A long history of research demonstrates that positive peer relationships are associated with more positive student behaviors and outcomes, such as improved mental health, less peer victimization, and the

development of positive interpersonal skills for future relationships (Barry & Wentzel, 2006; Buhs & Ladd, 2001; CDC Report, 2009; Crockett, Losoff, & Petersen, 1984; Epstein, 1983; Jenkins & Demaray, 2012; Juvonen, Espinoza, & Knifsend, 2012; Shochet, Smith, Furlong, & Homel, 2011; Tanigawa, Furlong, Felix, & Sharkey, 2011). Children who are socially successful are also the most likely to be successful academically and in extracurricular activities (Wentzel, 1999). Success both in and outside the classroom contributes to a stronger sense of belonging at school, and peer acceptance is notably tied to that sense of belonging (Juvonen et al., 2012).

Application of "belief in others" construct to LD. Relationships with others, be they supportive educators, friends, or family members, can help to counteract the negativity and failure that many students with LD experience. Prior research has demonstrated the critical role that external supports, including family, can play, particularly for vulnerable students. For example, minority students from families with low-income whose families maintained high levels of participation with their child's elementary school were more likely to complete high school (Henderson & Berla, 1994). Minority students from low-income homes whose mothers were actively involved in their education showed more self-control in the classroom setting (Henderson & Berla, 1994). As students with LD are often failing in a classroom setting, even more robust educator, family, and peer support may be necessary for positive future outcomes, such as staying in school and developing meaningful relationships.

Emotional competence. The domain of *emotional competence* investigates the youth's sense of emotion regulation, self-control, and empathy. Each construct has been linked with a greater sense of well-being (You, Furlong, Felix, & O'Malley, 2015).

Emotion regulation. The construct of emotion regulation refers to an individual's ability to "…influence which emotions we have, when we have them, and how we experience and express these emotions"(Gross, 2008, p.497). This construct is closely tied to other forms of self-control and self-awareness, and in the same way, contributes to better overall social-emotional functioning. The purpose of effective emotion regulation is to be able to channel emotions into positive, adaptive, goal-directed responses to stimuli (Aldao, 2013). Emotion regulation is one component of successful school readiness and adaptation to school in early childhood (Schelble, Franks, & Miller, 2010), and is associated with better peer relationships and social functioning in adolescence (Murphy, Shepard, Eisenberg, & Fabes, 2004). Youth who exercise good emotion regulation have been found to be more resilient as well (Buckner, Mezzacappa, & Beardslee, 2003). Emotions are not always functional, and can sometimes result in negative consequences. Therefore the ability to regulate emotions appropriately helps them to then serve a functional purpose. Hessler and Katz (2010) conducted a longitudinal study utilizing semistructured interviews with participants, which revealed an association between poor emotional competence and likelihood of engaging in risky behaviors. When youth have difficulties regulating emotions, they are more likely to engage in maladaptive behaviors, such as drug use (Hessler & Katz, 2010).

Empathy. The construct of empathy describes an individual's ability to respond to another individual's emotional state, either through a purely emotional response (affective empathy), or through an intellectual capacity to understand the feelings of another person while at the same time recognizing the source (cognitive empathy; Decety & Jackson, 2004). High levels of empathy are positively related to reports of subjective well-being, which

includes such components as happiness, positive affect, and overall life satisfaction (Wei, Liao, Ku, & Shaffer, 2005).

Self-control. Self-control, or self-discipline, is the ability to control one's behaviors, desires, and thoughts, particularly when confronted with challenging situations. It can also be conceived of as the ability to delay gratification, which in turn is linked to planning and working towards long-term goals (Henden, 2008). Prior studies have demonstrated that greater self-control is linked to higher grade point averages, lower incidence of eating disorders, and lower rates of alcohol abuse in undergraduate students (Tangney, Baumeister, & Boone, 2004). Other benefits of self-control as related to youths' social-emotional health include: less disruptive behavior in the classroom, more aptitude to take responsibility for actions, increased empathy, and more likely to act in a moral manner (Bear & Duquette, 2008).

Application of "emotional competence" construct to LD. Emotion regulation and self-control are particularly important strengths for students with LD to build, as there is no mechanism by which a person can outgrow a LD. Rather, these students are taught strategies and equipped with tools to help lessen the impact and learn in school despite the LD. These strategies, however, take time to learn, and keeping up academic motivation and enthusiasm despite repeated failure may be a difficult exercise in delayed gratification. Indeed, prior studies have demonstrated that children with LD are at higher risk for experiencing problems related to emotion regulation, as well as social information processing deficits that lead to poor perspective-taking and misinterpretation of others' intentions (Bauminger & Kimhi-Kind, 2008).

Engaged living. The domain of *engaged living* includes measures of gratitude, optimism, and zest. When youth are meaningfully engaged in activities that interest them, it increases their psychological well-being overall and motivates them to pursue goals (Reschly, Huebner, Appleton, & Antaramian, 2008).

Optimism. The construct of optimism is most commonly defined as the tendency to believe in the positive—that good things will happen or that the future is generally bright (Carver, Scheier, & Segerstrom, 2010). A personality that leans more heavily towards optimism experiences both physical and cognitive benefits. With respect to physical health, more optimistic individuals have been shown to have a decreased risk of cardiovascular problems (Kubzansky, Sparrow, Vokonas, & Kawachi, 2001). With respect to social emotional health and well-being, higher levels of optimism are correlated with lower levels of depression in youth, whereas students who are more pessimistic report higher levels of anxiety (Ey et al., 2005). Schools present an ideal place to foster an increased sense of optimism, as teachers and peers have been shown to be a significant influence on optimism (Foregeard & Seligman, 2012).

Zest. The construct of zest is most often associated with enthusiasm, happiness, and energy across settings (Josephson & Vinguard, 2007). Students who approach life with zest are more meaningfully engaged with activities in their lives. It is also one of the strength components most strongly related to reports of overall life satisfaction (Park & Peterson, 2006). Zest is also considered to be a protective factor against mental health concerns such as anxiety (Peterson, Ruch, Beermann, Park, & Seligman, 2007).

Gratitude. The positive construct of gratitude has been described as, "the appreciation of what is valuable and meaningful to oneself" (Sansone & Sansone, 2010, p. 18). This can

include thankfulness for something that another has done for you or given to you, or simply a more general attitude or orientation towards gratitude and appreciation (Furlong, Froh, Muller, & Gonzalez, 2013; McCullough, Emmons, & Tsang, 2002). Youth that report feeling grateful also report more general life satisfaction and feelings of well-being, as well as higher levels of protective factors (Ma, Kibler, & Sly, 2013). This becomes especially important for students experiencing higher than average levels of risk, who may benefit from the buffering effects of protective factors (Morrison & Cosden, 1997).

Application of "engaged living" construct to LD. Many students with LD find strengths and talents outside of the classroom, and this fourth domain reflects a general sense of engagement in life that can occur despite failure in some realms. Lackaye and Margalit (2006) determined that students with LD had higher depressive moods and less hope for their futures than their age-matched peers. However, students with LD did express hope and positivity when they engaged with other peers and had interests outside of the classroom (Lackaye & Margalit, 2006). Educators, parents, and friends can help build engagement and enthusiasm for interests and activities outside of the reading, writing, and math activities that often prove difficult for students with LD. Developing interests where self-esteem can build, where there is not consistently repeated failure, and where a LD is not front and center may contribute to the positive development of youth with LD.

Discussion

Students who are able to compensate for deficiencies and cope with challenges may be more likely to go on to demonstrate successful school and life outcomes. The strengths outlined above are some of the capacities that educators and practitioners may wish to focus on building in youth. Nearly two decades ago, Morrison and Cosden (1997) called for

interventions for students with LD to be strengths-focused in order to build resilience capacities. The American educational system's over-reliance on interventions that simply boost standardized test scores has likely inhibited the rise of this kind of programming, but the tide seems to be shifting (Greenberg et al., 2003). For example, Margalit (2004) has encouraged researchers to conduct studies that analyze subgroups of LD students who display social-emotional strengths and resilience factors, despite their deficits in cognitive processing. This refers to students who, despite their status as a student with LD and the accompanying challenges, are experiencing more successful outcomes than their peers with lower personal strengths. Identifying the factors that led to these students' social and emotional strengths may be beneficial to educators. A better understanding of the social emotional profiles of students with LD will help in the process of intervening and hopefully also preventing negative outcomes. The use of an assessment tool that can identify strengths and inform intervention efforts is an important part of this process.

Measurement Invariance

In any scale development, measurement equivalence is a key concept. Measurement equivalence, or measurement invariance, refers to the idea that the same construct is being measured across identified groups of interest (in the case of this study, LD students and non-LD students; Vandenberg & Lance, 2000). That is, confirming measurement equivalence provides evidence that the same construct is being conceptualized in an equivalent way across all groups. It is critical that assessments be analyzed for use with diverse populations (Byrne & Campbell, 1999; Chen, 2008). This is to minimize the risk that group differences are real, and not due to measurement error. Though a scale might replicate the same factor structure across groups, Byrne and Campbell (1999) argue that this does not guarantee that a

given instrument is operating the same across groups, which can alter the interpretation of mean difference results. There are any number of reasons that a measure might vary across groups such as (a) including social desirability and more global response biases, or (b) subtle group differences in the emphasis that one group might place on a latent trait, and differences in how items are understood (Chen, 2008). Though researchers rarely conduct or report the findings of psychometric aspects of scoring data before comparing groups, tests of measurement invariance prior to comparing groups constitutes best practices (Vandenberg & Lance, 2000).

In order to establish measurement invariance, a series of analyses are needed. First, an overall omnibus test of invariance is needed to ensure equality of covariance matrices across groups (Vandenberg & Lance, 2000). Then, a test of configural invariance confirms the factor structure across groups, implying that the two groups are conceptualizing the constructs in a similar way (Vandenberg & Lance, 2000). Configural invariance must be achieved before conducting subsequent tests. If so, metric invariance assesses whether factor loadings for like items are invariant across groups, and must be achieved for the final test to be meaningful. Scalar invariance assesses the hypothesis that the item intercepts are invariant across groups (Vandenberg & Lance, 2000). Differential item functioning was considered as a method for testing for survey items that performed differently across groups, but recent studies (Schmitt & Kuljanin, 2008) express that Confirmatory Factor Analysis (CFA) techniques and those employed in item response theory return similar results, and the CFA is a preferable technique when dealing with multiple dimensions (Schmitt & Kuljanin, 2008).

The Current Study

This study will examine the factor structure of the SEHS–S (Figure 2) with a sample of students both with and without the LD classification, and determine whether the factor structure is invariant across these groups. This is an important determination to make, as students classified with a LD represent the largest category of students receiving special education services under federal law. Results from the study will contribute to the development of norms and guidelines for administration for this measure, as well as explore the differences in social-emotional profiles between LD and non-LD students.

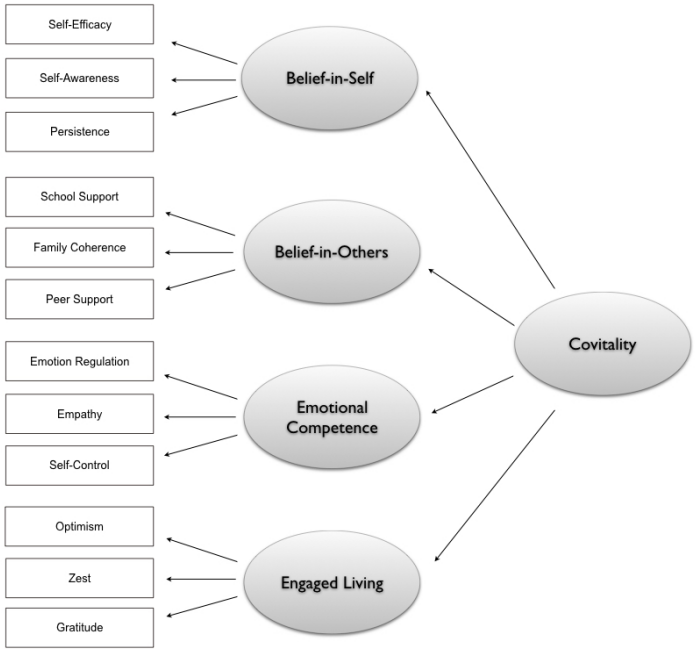

Figure 2. The model of the Social Emotional Health Survey–Secondary

Measurement equivalence has been tested with respect to the SEHS–S on several pertinent demographic factors, with preliminary studies revealing invariance across groups of males and females, five ethnically diverse groups, and different aged groups of students (Furlong et al., 2013; You et al., 2013, 2015). The developers of the SEHS–S completed an

initial confirmatory factor analysis, measurement equivalence test, and latent means test to support the underlying theoretical model of the SEHS–S and measurement equivalence (Furlong et al., 2013). This initial study also demonstrated that the overarching construct of covitality was associated with higher academic achievement, lower rates of substance use, and fewer depressive symptoms. It also revealed latent mean group differences with a small effect size in terms of gender, where females were more likely to endorse higher responses on *belief in others* and *emotional competence* items, and males were more inclined to endorse higher *belief in self* items (Furlong et al., 2013). You and colleagues (2013) also examined invariance with respect to four gender and age groups (male, female, 13 to 15 years-old, 16 to18 years-old), and found complete factorial invariance. In another study, You and colleagues (2015) tested measurement equivalence of the SEHS–S with a sample of nearly 15,000 students, across gender groups and five sociocultural groups. The sociocultural groups included: Latino/a, Black, Blended, Asian, and White, and all groups showed adequate fit to the model. In comparing latent means, White students were found to have slightly higher scores on the domains of *belief in self*, *belief in others,* and *emotional competence* when compared with their Latino/a peers. Among these several very promising studies, however, to date no studies have investigated the SEHS-S for invariance across disability status groups.

Analytic Plan

Research Question 1. *Is the SEHS–S invariant across general education and LD students?* A confirmatory factor analysis (CFA) will be conducted to test the fit of the previously validated factor structure (see Figure 2). The a priori hypothesized four-factor model with the higher order factor of "covitality" will be examined separately for both the

LD and non-LD samples in order to examine model fit for both the LD and non-LD populations (confirmed by examining the fit indices of each group individually; Meade, Johnson, & Braddy, 2008).

Next, structural equation modeling will be used for an omnibus test of measurement invariance across LD and non-disabled groups. Configural invariance will be tested to ensure that the pattern of factor loadings is consistent across groups. Specifically, the configural invariance test identifies if the number of factors is equal across groups, and shows that the same indicators are loading onto the same factors. This will be examined by allowing all parameters to be freely estimated, and then verifying that model fit indices remained adequate. Configural invariance must be achieved in order for the ensuing tests to be meaningful.

As the model fit indices remained intact, metric invariance will then be tested, which examines whether or not the values of the factor loadings are different across groups. Given the large sample size and the increased likelihood that the change in chi square (χ^2) will be a significant value, a more sensitive test is required—the change in comparative fit index (CFI) test will be applied to determine whether there are significant decrements in model fit (Cheung & Rensvold, 2002). Metric invariance must be achieved in order for the next test to be meaningful. Then, scalar invariance wil be tested, which constrains both the item intercepts and factor loadings to equality. In this way, the equality of the indicator intercepts across groups can be examined, to determine that those with the same score on the latent constructs would likely score the same on the subdomain items. Finally, the equality of latent factor means across groups will be examined.

It was anticipated that given prior findings, the SEHS–S latent structure and between-group measurement invariance will be replicated across groups, LD and general education.

Research Question 2A. *Do LD and general education students report significantly different scores on any of the latent trait factors (belief in self, belief in others, emotion regulation, and engaged living).* A comparison of the equality of latent means will be used to analyze the differences between group means on the four SEHS-S domains of *belief in self, belief in others, emotion regulation, and engaged living*. As noted, the quantity of strengths across domains is more indicative of success than any single strength, and so examining group differences based on the four domains is a useful metric. Understanding the group differences on a more granular level can help to more directly inform intervention services. Prior research has demonstrated that students with LD have a lower sense of academic self-efficacy (Lackaye & Margalit, 2006), may have inconsistent peer relationships and struggle to keep friendships (Margalit, 2004), may exhibit challenges with emotion regulation, and are at higher risk for depressive mood and hopelessness (Bauminger & Kimhi-Kind, 2008). Therefore, it was anticipated that students with LD will report significantly lower scores on the four domains of *belief in self, belief in others, emotion regulation, and engaged living.*

Research Question 2B. *Do LD and general education students report significantly different levels of overall social emotional health?* A comparison of the equality of latent means was used to analyze the differences between group means on overall covitality score of the SEHS-S. The overall score is useful at the individual student level, as it has been shown to be a predictor of subjective well-being (Furlong et al., 2013), or as a population/group-level indicator of social emotional health that could inform classroom or

schoolwide efforts, and help a school understand their LD students' overall level of functioning.

It was anticipated that students with LD will endorse lower cumulative social and emotional strengths than their general education peers, as this overall factor is made up of four domains, in each of which students with LD are likely to report lower levels of strengths.

Table 1

Questions, Hypotheses, and Analyses

Questions	Hypotheses	Analyses
Q1A: Is the SEHS–S invariant across general education and LD students?	**H1A:** Yes (CFA examining factor structure and configural, metric and scalar invariance)	CFA
Q2A: Do LD and general education students report significantly different scores on the four domains of social emotional health?	**H2A:** Yes, LD students will report lower scores on each of the four domains on the SEHS–S.	Comparison of latent means
Q2B: Do LD and general education students report significantly different levels of overall social emotional health?	**H2B:** Yes, LD students will report lower overall social emotional health than their general education peers.	Comparison of latent means

II: Method

Participants

Participants were sampled in the fall of 2014 via a universal mental health screening effort at three high schools in southern California. Students ranged from Grades 9-12, with an approximately even distribution across grade levels (Table 2). School 1 serves approximately 329 ninth- and eleventh-grade students (only ninth- and eleventh-grade students were surveyed in this sample); School 2 serves 641 students; and School 3 serves 1,877 students. Of the possible 2,847 students, 2,726 students had valid surveys (i.e., surveys not missing more than five responses). There were approximately equal numbers by gender in the sample: 52% male and 48% female. Roughly 14% (n = 394) of the students had active special education individual education plans with LD as the identified disability, which aligns with a similar prevalence of LD in the larger population (10-15%; Cortiella & Horowitz, 2014). It is presumed that these students qualified for special education using one of three primary methods for determining an LD. The first is the discrepancy model, where inadequate academic achievement is measured against expectations for a child's age or grade level standards. The second is a lack of response to scientific, evidence based interventions (RTI), and lastly evidence of a pattern of strengths and weaknesses in achievement relative to age and grade level standards. In considering the subset of only LD students, there are more males (66%) than females (34%), which is expected given the higher numbers of males represented in the LD population at large (Oswald et al., 2003). The ethnic composition of the LD population is 73% Latino/a, 13.1% White Non Latino/a, 3.2% Black, 7.5% American Indian, 0.5% Asian, and 0.7% were Other or Missing (Table 2). The distribution across ethnicity is reflective of the larger population of California, and despite a predominance of

Latino/a students in this sample, prior studies have indicated complete factorial invariance with respect to ethnicity (You et al., 2015).

Table 2

Demographic Information for the Sample

Grade Level*		LD	Non-LD
	9th grade	12%	31%
	10th grade	32%	25%
	11th grade	32%	25%
	12th grade	24%	19%
Gender			
	Male	66%	52%
	Female	34%	48%
Ethnicity			
	Latino/a	75%	73%
	White	13.1%	14%
	Black	3.2%	2.3%
	American Indian	7.5%	5.2%
	Asian	0.5%	2.3%
	Other/Missing	0.7%	3.2%

Measure

The SEHS–S (Furlong et al., 2013) contains 36 items, each of which contribute to one of 12 subdomains, which in turn load onto one of four first order latent traits, and creates an overall strengths score, termed "covitality" (see Figure 1). Ten subdomains (excluding gratitude and zest) use the following response scale: 1 = *not at all true of me*, 2 = *a little true of me*, 3 = *pretty much true of me*, and 4 = *very much true of me*. The gratitude and zest subdomains use the following response scale: 1 = *not at all*, 2 = *very little*, 3 = *somewhat*, 4 = *quite a lot*, 5 = *extremely*. In prior studies, internal consistency reliability scores have been found to be high: *belief in self* (α = .76), *belief in others* (α = .81), *emotional competence* (α = .78), and *engaged living* (α = .87; Furlong et al., 2013). The internal consistency reliability

scores were similarly high in this study's sample: *belief in self* (α = .81), *belief in others* (α = .83), *emotional competence* (α = .82), and *engaged living* (α = .89).

Procedures

In the fall of the 2014-2015 academic year, three high schools (total N = 2,847; School A, n_1 = 329; School B, n_2 = 641; School C, n_3 = 1,877) in Southern California were administered the SEHS–S as part of a larger universal effort to identify students in need of prevention and intervention services. Informed parental consent was obtained via a human subjects-approved consent form that was distributed to students early on in the school year. Schools 1 and 2 devoted a dedicated class period(s) for their students to complete the screening, while School 3 administered the survey over the course of two weeks as students rotated through the computer lab. Teachers read a prepared script to their students to inform them of the purpose of the screening and the instructions to complete the survey. The teachers sought student assent, informing the students that they were not required to complete the survey and could opt out with no negative consequences. Enrollment information and rosters obtained from the school included demographics of the school population (i.e., gender, age, ethnicity, attendance, GPA, and disability status). Membership in the LD group was determined by the responses to two variables included in the student information database that the school collects at registration: Is the student receiving special education services? and, Under what classification is the student receiving special education services? In order to be included in the LD sample, responses must be "yes" to the first item, and "SLD" to the second item.

III. Results

Descriptive information for the SEHS-S scores for the LD and non-LD samples is presented in Tables 3 and 4. Overall sum scores on the SEHS–S ranged from 43 to 150 (Table 3). Utilizing the scores created from prior samples, Low strengths would be less than or equal to 85; Low Average strengths range from 86–106; High Average range from 107–127, and High strengths indicated by a score greater than or equal to 128. For the LD group, the scores ranged from 54 to 146, and the general education group scores ranged from 43 to 150. The mean covitality score for the LD group was 108.54. The mean covitality score for the non–LD group was 112.72. These mean scores both fall into the High Average range. On the *belief in self* domain, the mean of the LD group was 26.14, and the mean of the non-LD group was 27.08. For *belief in others*, the means of the LD and non-LD groups were 28.68 and 29.2. On the *emotional competence* domain, the mean of the LD group was 27.16 and 28.73 for the non-LD group. On the engaged living domain, the LD group mean and the non-LD group mean were nearly equal, at 29.80 and 29.74, respectively (Table 3). Bivariate correlations for the 12 constructs were significant ($p < .01$) but moderate across both groups (Table 4).

Table 3

Descriptive Information for the SEHS–S

	Mean (SD)		Range	
	LD	Non–LD	LD	Non–LD
Covitality	108.54 (15.93)	112.72 (16.83)	54–146	43–150
Belief in self	*26.14 (4.22)*	*27.08 (4.41)*	*14–36*	*10–36*
Self-awareness	9.49 (1.85)	9.57 (1.62)	3–12	3–12
Self-efficacy	9.05 (1.67)	9.77 (1.83)	3–12	3–12
Persistence	7.55 (2.05)	7.67 (2.07)	3–12	3–12
Belief in others	*28.68 (4.71)*	*29.27 (5.01)*	*14–36*	*9–36*
School support	9.64 (2.08)	9.67 (2.31)	3–12	3–12
Family Coherence	9.61 (1.87)	9.61 (2.22)	4–12	3–12
Peer Support	9.50 (2.39)	9.96 (2.33)	3–12	3–12
Emotional	*27.16 (4.48)*	*28.73 (4.30)*	*15–36*	*11–36*

competence				
Emotion regulation	9.20 (1.83)	9.69 (1.75)	5–12	3–12
Empathy	9.42 (1.98)	10.03 (1.91)	3–12	3–12
Self-control	8.57 (2.06)	8.97 (1.77)	3–12	3–12
Engaged living	*29.80 (6.00)*	*29.74 (6.19)*	*11–42*	*9–42*
Optimism	9.10 (2.18)	9.11 (2.19)	3–12	3–12
Zest	9.75 (2.49)	9.24 (2.75)	3–15	3–15
Gratitude	11.01 (2.72)	11.40 (2.64)	3–15	3–15

Table 4

Correlation Matrix for the SEHS–S for LD and non-LD Groups

Measure	Self-Efficacy	Self-Awareness	Persistence	School Support	Family Coherence	Peer Support	Emotion Regulation	Empathy	Self-Control	Optimism	Zest	Gratitude
Self-Efficacy	–	.54**	.45**	.39**	.33**	.25**	.34**	.22**	.36**	.41**	.32**	.33**
Self-Awareness	.54**	–	.40**	.40**	.47**	.24**	.39**	.20**	.39**	.53**	.41**	.40**
Persistence	.36**	.28**	–	.45**	.31**	.21**	.37**	.30**	.41**	.37**	.33**	.30**
School Support	.41**	.44**	.41**	–	.36**	.33**	.31**	.29**	.28**	.41**	.34**	.35**
Family Coherence	.26**	.31**	.33**	.32**	–	.24**	.28**	.15**	.30**	.41**	.32**	.38**
Peer Support	.17*	.24**	.26**	.31**	.31**	–	.25**	.34**	.19**	.26**	.19**	.29**
Emotion Regulation	.40**	.43**	.38**	.35**	.33**	.31**	–	.41**	.56**	.31**	.22**	.32**
Empathy	.178**	.27**	.21**	.34**	.16*	.38**	.29**	–	.38**	.20**	.11**	.31**
Self-Control	.34**	.40**	.32**	.32**	.27**	.21**	.51**	.29**	–	.34**	.22**	.33**
Optimism	.38**	.40**	.43**	.44**	.35**	.29**	.38**	.26**	.30**	–	.57**	.47**
Zest	.25**	.22**	.37**	.36**	.30**	.15*	.23**	.08	.20**	.52**	–	.45**
Gratitude	.24**	.32**	.27**	.41**	.32**	.27**	.34**	.27**	.31**	.46**	.45**	–

Note: Intercorrelations for non-LD participants are presented above the diagonal, and intercorrelations for LD participants are presented below the diagonal. Means and standard deviations for non-LD participants are presented in the vertical columns, and means and standard deviations for LD participants are presented in horizontal rows.
* $p < .05$ (2-tailed).
** $p < .01$ (2-tailed).

SEHS–S Invariance

A confirmatory factor analysis was performed using Mplus 6.0 (Muthen & Muthen, 1998-2012) to examine the factor structure and model invariance of two groups of students—LD and non-LD—on the SEHS–S. A factor structure with four first-order factors and a higher-order factor was previously established for the 12 psychological building blocks (Figure 1; Furlong et al., 2013). The higher-order factor is covitality. The first-order factors are: *belief in self*, comprised of self-awareness, self-efficacy, and persistence; *belief in others*, comprised of school support, family coherence, and peer support; *emotional competence*, which includes emotion regulation, empathy, and self-control; and *engaged living*, including optimism, zest, and gratitude.

Table 5

Measurement Invariance Results of the First Order Factors

	χ^2	*df*	$\Delta\chi^2$	Δdf	RMSEA (90% CI)	CFI	ΔCFI	TLI	SRMR
Overall	745.83	48	–		.07 (.07, .08)	.926		.900	0.04
Single Group Solutions									
LD	79.87	48	–		.05 (.03, .07)	.956	–	.940	0.05
Non–LD	706.07	48	–		.07 (.07, .08)	.930	–	.900	0.04
Simultaneous	841.85	112	–		.07 (.07, .07)	.930	–	.910	0.05
Measurement Invariance									
Configural	785.94	96	–		.07 (.07, .08)	.930	–	.910	0.04
Metric	795.41	104	9.47	8	.07 (.07, .07)	.931	.001	.912	0.05
Scalar	841.85	112	55.91**	8	.07 (.07, .07)	.927	-.004	.914	0.05

** $p < .01$.

The models were evaluated utilizing criteria for fit statistics considered by Brown (2006). Comparative Fit Indices (CFI) and Tucker-Lewis Indices (TLI) values equal to and exceeding .95 indicated a good model fit. The Root-Mean Square Error of Approximation (RMSEA) value is adequate when it is between .05 and .08, and considered good when it is

below .05. Also, a Standardized Root Mean Square Residual (SRMR) value equal to or below .05 indicates good fit. The a priori overall CFA model was tested with no groups delineated. Using Brown's criteria, the overall model showed adequate fit. The results of this initial analysis were: $\chi^2 = 745.83$, CFI = .926, TLI = .900, SRMR = .04, and RMSEA = .07 (Table 5).

Next, single group solutions were examined by separating the LD and non-LD samples and confirming the factor structure separately. The single group solutions demonstrated adequate fit based on the prior criteria (Table 5; Brown, 2006). For the LD group, $\chi^2 = 79.87$, and CFI and TLI values were .956 and .940, respectively. The SRMR was found to be .05, and the RMSEA was .05. For the non-LD group, adequate fit was also found based on the following results: $\chi^2 = 706.07$, and CFI and TLI values were .930 and .900, respectively. The SRMR was .04 and the RMSEA was .07.

A simultaneous CFA with two groups imposed was then conducted. This test demonstrated adequate model fit, $\chi^2 = 841.85$, CFI = .930, TLI = .910, SRMR = .05, RMSEA = .07. Given the model fit of these initial tests, tests of measurement invariance were then conducted. First, configural invariance was tested to ensure that the pattern of factor loadings was consistent across both the LD and non-LD groups, both in the number of factors and the same pattern of indicators loading onto the same factors between groups. In this step, all model parameters were freely estimated. The resulting model was determined to have adequate model fit based on Brown's recommendations (2006; Table 5). The factor loadings were of adequate magnitude across both LD and non-LD groups (.37 – .98) and all statistically significant at the $p < .001$ level (Figure 3 and Figure 4). The CFI and TLI values

were .930 and .910, respectively. The RMSEA and SRMR values were .07 and .04, respectively. This represents adequate fit and permits the ensuing tests to be meaningful.

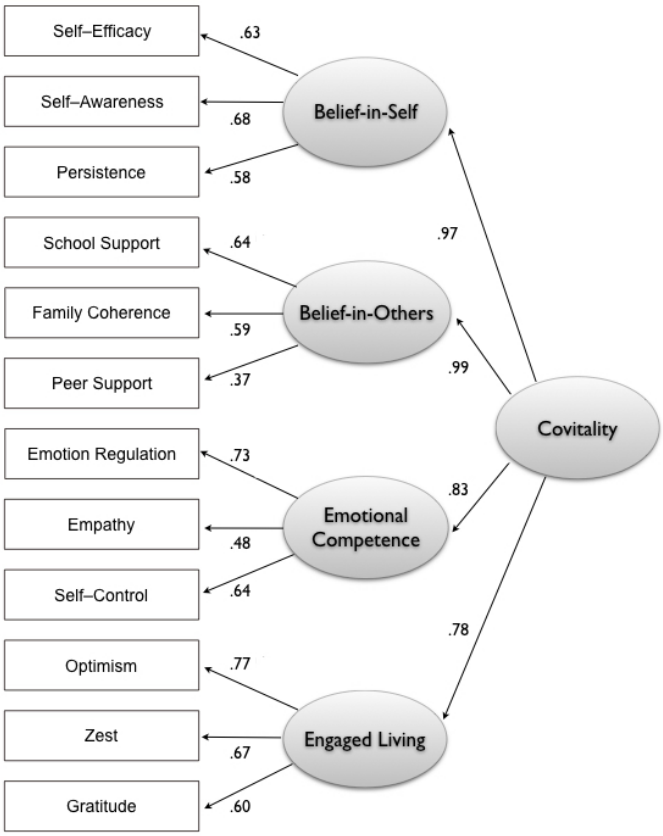

Figure 3. Social and Emotional Health Survey–Secondary higher-order covitality model for LD group; all loadings significant at $p < .001$.

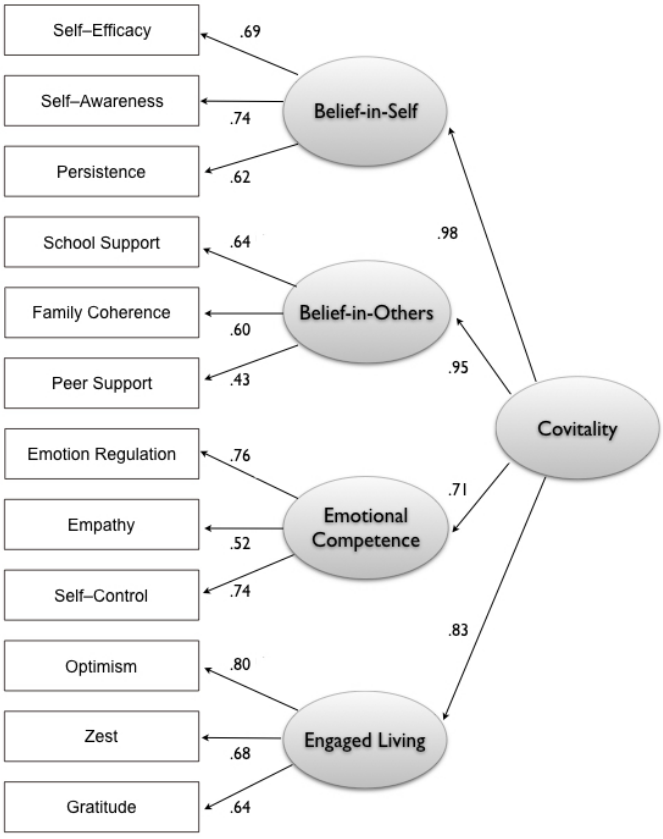

Figure 4. Social and Emotional Health Survey–Secondary higher order covitality model for non-LD group; all loadings significant at $p < .001$.

Since the model fit indices remained intact, metric invariance was then tested. This step examined whether the factor loadings were similar across groups. There was not a significant decrement in model fit between the configural and metric steps, indicating that the model remained invariant at this step (CFI = .931, TLI = .912, SRMR = .05, RMSEA = .07). Scalar invariance was then tested, to determine the equality of the indicator means across the LD and non-LD groups. At this step, the factor means were constrained to zero, and equal factor loadings and equal indicator means were imposed. Utilizing the χ^2 difference test, this step would have indicated a significant decrement in model fit, thereby indicating that there

was some non-invariant indicator(s) between groups. However, due to the sensitivity of the chi-square change test, and the large sample size, at this step the change in CFI test is preferred and was utilized (Cheung & Rensvold, 2002) to ascertain whether there was a significant decrement in model fit. According to this test, the change in CFI value must be greater than .01 to be considered a significant decrement in model fit. For this sample, the change in CFI was .004, indicating that there was not a significant decrement in model fit (Table 5). Results indicate that the SEHS–S scale can be considered invariant across LD and non-LD groups.

LD and General Education Group Domain Comparisons

To understand whether there are significant differences between the LD and non-LD groups on any of the four factors, the equality of latent factor means across groups was examined. There were statistically significant differences between the groups on the factors of *belief in self* and *emotional competence,* however the effect sizes were small (Table 6). For the domain of *belief in self*, students with LD showed a significantly lower mean score (M = 26.14) than their non-LD peers (M = 27.08). For the domain of *emotional competence*, students with LD again showed a significantly lower mean score (M = 27.16) than their non-LD peers (M = 28.73). There were no significant differences found between groups on the domains of *belief in others* and *engaged living*.

Table 6

Factor Latent Means for the LD Group

	LD *M*	SE	Effect Size
Belief in Self	-.283**	.088	.21
Belief in Others	-.077	.118	.12
Emotional Competence	-.494***	.110	.36
Engaged Living	.060	.132	-.10

Note: The factor means of the non-LD students were constrained to zero.
** $p < .01$. *** $p < .001$.

LD and General Education Group Covitality Comparison

Once invariance at the foundational four-factor level had been established, the next step was to investigate the model inclusive of the higher-order factor of covitality. To do so, the first-order factor intercepts were fixed to zero in order for the model to converge. All factor means were constrained to zero to test configural invariance, that is, determining whether the four first-order factors adequately loading onto the higher-order factor of covitality. The model fit statistics (shown in Table 7) are as follows: $\chi^2 = 914.66$, CFI = .920, and TFI = .911. The RMSEA and SRMR values were .07 and .05, respectively. According to the Brown (2006) criteria, these fit statistics represents adequate fit and permit the ensuing tests to be meaningful.

Next, an examination of metric invariance identifies if the first-order factor loadings onto the higher-order factor of covitality are similar. Fit statistics include: $\chi^2 = 914.66$, CFI and TLI values were .920 and .912, respectively. The RMSEA and SRMR values were .07 and .05, respectively. There was no change in model fit at this stage, so the next measurement step was completed. The analysis of scalar invariance reveals if there are equal loadings and intercepts between the LD and non-LD group. Again, the large sample size calls for a more sensitive test to be used to determine invariance, and so according to the change in CFI test criteria, there was no significant decrement in model fit at this stage (change in CFI = .000). Therefore, the full SEHS–S proposed model could be considered to be invariant between LD and non-LD groups. Upon comparing the factor means, the LD group had a statistically significantly lower covitality mean than the non-LD group by -0.213 standard deviations (SE = .078, $p < .01$), however the effect size was small (.25).

Table 7

Measurement Invariance Results for the Higher-Order Factor of Covitality

	χ^2	*df*	$\Delta\chi^2$	Δdf	RMSEA (90% CI)	CFI	ΔCFI	TLI	SRMR
Higher Order Measurement Invariance									
Configural	914.66	119	-		.07 (.07, .07)	.920	–	.911	.05
Metric	914.66	120	0.00	1	.07 (.07, .07)	.920	–	.912	.05
Scalar	907.16	119	-7.50**	1	.07 (.07, .07)	.920	–	.912	.05

***p* < .01.
****p* < .001.

IV. Discussion

The purpose of this study was to examine the measurement invariance of a survey instrument designed to measure the social emotional strengths of youth, and subsequently compare the social emotional profiles of both students with and without LD. As the LD diagnosis is by far the largest categorization of students who qualify for special education services under IDEA, this group is an important and vulnerable population, who may benefit from identification and intervention with respect to their social emotional health. Overall, the findings of this study confirm that the SEHS–S measure is invariant across groups of LD and non-LD students, as well as demonstrate that students with LD endorse a unique profile of personal strengths. Students with LD reported lower overall covitality, and specifically lower scores in the *belief in self* and *emotional competence* domains.

SEHS-S Invariance

The results of the measurement invariance analyses revealed that full factorial invariance was achieved across groups of LD and non-LD, or general education, students. That is, the same constructs are being measured by the SEHS–S across both groups of interest: the first order factors of *belief in self*, *belief in others*, *emotional competence*, and *engaged living*, and the higher order factor of *covitality*. This result contributes to the body of literature supporting the SEHS–S as a measure with adequate psychometric properties for assessing the strengths and personal assets of youth. Confirming measurement equivalence across these LD and non–LD students supports comparisons made between groups (Byrne & Campbell, 1999) on the four first-order factors and the higher-order factor of covitality. This is useful not only to build upon the supportive literature for the SEHS–S, which has found measurement invariance with respect to age, gender, and ethnicity (Furlong et al., 2013; You

et al., 2013, 2015), but to extend the literature regarding the unique social emotional health profiles of students with LD in hopes of supporting these students in the best way possible.

LD and General Education Group Domain Comparisons

The initial hypothesis that LD students would score lower on each of the four domains was partially confirmed. On two of the four first-order factors, *belief in self* and *emotional competence,* the LD students endorsed significantly lower social emotional strengths. On the remaining two, *belief in others* and *engaged living*, there were no significant differences between LD and non-LD groups.

By definition, students are diagnosed with LDs because they have an academic performance deficit. They have failed substantially enough in school to be identified as students in need, subsequently assessed, and diagnosed with LDs. Experience with significant challenges in school is a necessary condition for this diagnosis. For students with LD, failure in school can be as common as any time there is an assignment, quiz, or test (Sideridis, 2007). Results of the current study demonstrate that students with LDs do endorse lower levels of *belief in self* (comprised of self-efficacy, self-awareness, and persistence) than their non-LD peers. While these results are consistent with the theoretical understanding of how these constructs may differ for LD students, small effect sizes warrant additional research. Academic self-efficacy relates to students' beliefs about what they are capable of and what they can do (Schunk & DiBenedetto, 2014). Academic self-efficacy generally develops as a result of students' experience and their personal histories (Lackaye & Margalit, 2006), so it follows that students with LD, who have experienced a tremendous amount of failure in the academic setting, would endorse lower levels of *belief in self*. Academic persistence and effort in general would be difficult to maintain in the face of years of failure.

During adolescence, when so much of a youth's life revolves around school and is spent in school hours, it is unsurprising that failing or the sense of failure felt for the great majority of their days and weeks contributes to a lower *belief in self*. The finding of lower *belief in self* scores in students with LD also relates to prior literature demonstrating that how students see themselves academically is strongly related to how they see themselves globally (Elbaum & Vaughn, 2003), therefore low academic self-confidence may precede a more global lack of self-confidence. This may only persist and increase over time, as the achievement gap between LD and non-LD students widens every year that they progress through school (Spaulding, 2010). Therefore, the finding that LD students endorse lower levels of *belief in self* (made up of self-efficacy, self-awareness, and persistence) is expected, given prior research regarding what happens to students experiencing school failure; they lose self-confidence, lose faith in their capabilities, and persistent school failure may trigger depression and anxiety as a stress response (Sideridis, 2007). At the most extreme end, youth without high school diplomas experience poorer long-term physical health compared to their peers with a high school diploma, as well as higher rates of need of public assistance (Moretti, 2005; Muennig, 2005; Rouse, 2005). Intentionally enhancing students' strengths and assets may help to instead build the *belief in self* of students with LD in hopes of preventing or lessening these negative outcomes.

The results of the current study demonstrate that students with LD endorsed lower levels of *emotional competence* (comprised of self-control, emotion regulation, and empathy). Previous findings indicate that students with LD are a greater risk for experiencing problems related to emotion regulation (Bauminger & Kimhi-Kind, 2008). Current findings are consistent with this literature, however, due to negligible effects sizes, additional

replication is needed. Self-control is the ability to regulate one's own behaviors, particularly when confronted with challenges. Students with LD are often confronted with challenges, particularly academic, and for a long time were rarely successful in overcoming those challenges. Problem behaviors often arise as a result of a deficit in the ability to control one's own behaviors, and researchers have noted a link between students with LD and higher endorsements of problem behaviors (Wiener & Tardif, 2004). As self-control and emotion regulation are linked to long-term goal planning and achievement (Henden, 2008), it is again within the interests of educators to supplement, support, and enrich the emotional competences of students with LD.

A more distant, but still substantive connection to lower levels of *emotional competence* is the increase of risk-taking behaviors. McNamara and Willoughby (2010) demonstrated that adolescents with LD are more likely to engage in risk-taking behaviors than their peers, including smoking (cigarettes and marijuana), delinquent acts, aggressive acts, and truancy. This relates to the notion that when youth are not as capable of regulating their emotions, they are more at risk for engaging in maladaptive behaviors (Hessler & Katz, 2010). Indeed, there is an overrepresentation of people with LD in juvenile and adult incarceration (Annamma, 2014; Quinn et al., 2005), and poor emotional regulation may be one (of many) contributing factors to this occurrence.

There was no significant differences found between groups on the factor of *belief in others* (comprised of school support, family coherence, and peer support). The domains forming this subscale have produced conflicting evidence in prior literature. For example, Bauminger and Kimhi-Kind (2008) assessed the social information processing skills of students with and without LD. The skills needed to process social information directly inform

the success or failure of children's social interactions, and therefore, guide their friendships and relationships. These researchers found deficits in some aspects of social information processing for students with LD, but not all. When presented with social vignettes and asked a series of questions to assess their social awareness and competence, children with LD recalled less information about the story and were more likely to add misinformation than their peers without LD. The students with LD were also less able to generate multiple interpretations of a given vignette than their peers. However, there were no differences between groups on the ability to initially identify the problem in the social vignette, or choose the most appropriate solution in a given situation, despite generating fewer interpretations (Bauminger & Kimhi-Kind, 2008). How these subtle processing differences play out over the course of sustained friendships and familial relationships is bound to vary.

Another study examined the social skills and perceived friendships of students with LD in relation to their school placement. Wiener and Tardif (2004) found that students in inclusive educational environments reported having more friends, being less lonely, and having higher overall emotional functioning and better social skills than students in self-contained special education classrooms. However, if there are times that an LD student is pulled out of the general classroom to a resource classroom, this appears to have a stigmatizing effect and results in lower peer acceptance (Wiener & Tardif, 2004). These complexities would suggest that the social skills of students with LD are context-dependent. Still, other researchers investigating social comparison processes would argue that LD students base perceptions of themselves and develop social skills based on a peer reference group. If students with LD are comparing themselves to peers or siblings without LD, they will likely have a lower self-concept and exhibit lower social skills (Elbaum, 2002).

Given these nuanced findings, it is unsurprising that this domain, made up of a combination of social influences—family, peer, and school—is likely to be highly contextually dependent. This study's finding that there were no significant group differences on the *belief in others* domain likely indicates that there are factors other than LD status contributing to functioning in this domain. Parents, schools, and peers may vary widely in how they approach and manage LDs. If a child is enrolled in a supportive school with a commitment to inclusion and strong instruction at every level, a sense of school and peer support would likely be much higher. The results of analyses conducted on the *belief in others* domain may differ with a new sample in a school with a more or less inclusive classroom model, or a more or less accepting school climate.

There were also no significant differences found on the latent means of LD and non-LD groups with respect to *engaged living* (comprised of gratitude, optimism, and zest). Like *belief in others*, this may also be an area of great environmental and contextual variance. Some findings point to the high rates of depression and anxiety among youth with LD, and in fact label LD as a stress factor in the diathesis-stress model of mental health (Sideridis, 2007). Other evidence demonstrates that many skills and strengths can act as protective factors for individuals with LD to assuage feelings of hopelessness and negativity about their capabilities that can contribute to depression and anxiety (Idan & Margalit, 2014). It is likely that there are many elements contributing to the formation of feelings of optimism, zest, and gratitude that are not explained simply by an LD diagnosis. Further research on the social emotional profiles of students with LD may shed light on other influential factors.

LD and General Education Group Covitality Comparison

The comparison of latent means on the higher order factor of covitality suggest that students with LD report significantly lower overall social emotional health than their peers without LD. While to some degree this confirms the initial hypothesis that LD students' social emotional health would be lower than their peers, a small effect size (.25) warrants further study to confidently confirm this pattern amongst LD students. Nevertheless, this result does speak to the findings of prior studies that articulate many of the vulnerabilities that students with LD face, particularly with respect to their self-concept and emotional competence (e.g., Bauminger & Kimhi-Kind, 2008; Lackaye & Margalit, 2006). While the results of the four individual domains are varied (i.e., significantly lower scores for LD students in *belief in self* and *emotional competence*, but not for *belief in others* and *engaged living*), there were enough differences to decrease the LD group's overall covitality score to a significantly lower point than their peers without a diagnosis of LD. It is likely that there is a constellation of factors contributing to the overall lower social emotional functioning of youth with LD (Bauminger & Kimhi-Kind), and some of the most influential are in the domains of *belief in self* and *emotional competence*. Elbaum (2002) cites extensive evidence that students with LD have long reported lower academic self-concept than their peers, while Sideridis (2007) cites troubling rates of depression in LD youth. It follows that their overall social emotional health would be impacted by these elements.

Implications for Practice

The SEHS–S, as a psychometrically sound tool for assessing youth both with and without LD, is of use to educators whose interest it is to promote social-emotional health and well-being for the youth in their care. This study deepens the understanding that students

with LD may not naturally develop the same kind of belief in themselves and processes of emotional regulation, which is important information for teachers. As the educational system as a whole begins to adopt social-emotional curricula as a critically important part of a child's school experience, extending more substantive supports to students with LD may be necessary, especially with regard to their sense of self and emotional regulation. In addition, school psychologists who conduct the comprehensive assessment process in order to qualify a student as LD may wish to include a social emotional scale with adequate psychometric properties, in order to further understand the student and develop goals appropriate to their needs. Educators should be made aware that students with LD may need increased education and training around coping skills and strategies for how to regulate their emotions and continue to expend effort academically. Teachers attempting to guide their students may benefit from understanding that students with LD are more successful and confident with a strong sense of self-awareness, through which they can set realistic goals for themselves (Greenberg et al., 2003). It is in the best interest of these students that educators work to improve how students see themselves both academically *and* in other aspects of their lives.

Building up the strengths that contribute to *emotional competence* (emotion regulation, self-control, empathy) may be important for success of students with LDs not only in their school experience but in their vocations as well. While students will never outgrow their LD, they can certainly build and use compensatory strategies and skills to supplement areas of challenge. Educators may also benefit from knowing that there is no one magic strength or asset that will counteract all of the vulnerabilities that students face (Scales et al., 2006). Rather, building up more strengths over a variety of domains helps increase overall social emotional health (Lenzi, Dougherty et al., 2015; Scales et al., 2006). Ideally,

teachers would help students develop increased assets across multiple domains—increasing quantity and variety will likely provide the best protective mechanism for vulnerable students in terms of emotional and behavioral problems, as well as school victimization (Lenzi, Dougherty et al., 2015; Lenzi, Furlong et al., 2015; Scales et al., 2006). It may mean making a concerted effort to foster other interests, talents, and hobbies of students at school that lie outside the realm of traditional curricula. It may mean exposure to many different job opportunities, not just those that rely heavily on academic fundamentals. It may mean finding (or developing a new) evidence-based, social-emotional curricula that targets specific areas for students with LD.

Implications for Research

Undertaking a measurement invariance analysis is a fairly straightforward task, and represents best practice (Byrne & Campbell, 1999) when a study attempts to compare two or more groups in its' analyses. Establishing measurement invariance should precede any discussion of mean differences between groups, unless the scale has been previously determined to be invariant between the groups of interest. Not doing so may severely misrepresent mean difference findings (Byrne & Campbell, 1999). With this additional research conducted on the SEHS–S, more confident conclusions can be drawn about student profiles, regardless of gender, ethnicity, age, and now, LD status. In any administration of this survey in a school, roughly 15% of the sample will be LD, so this confirmation of measurement invariance can help make results of future administrations of the SEHS–S confidently interpretable. As a result, this particular survey is a more desirable instrument than others without this psychometric research base. When schools commit to devoting valuable time, effort, and resources to a screening or assessment effort, they ought to ensure

that the instruments that they choose can be reliably applied to their entire population of students. Further research might include considering factors such as how long the child has been diagnosed as LD, how much intervention they receive, and how inclusive their educational environment is, as these are factors known to influence a student's social emotional health (Elbaum, 2002; Wiener & Tardif, 2004). It may also be of interest to examine the contributions of the twelve individual subdomains to each of the first order factors, to determine if patterns exist as to subdomains that either increase or decrease the sum score making up the first order factor score. In addition, future studies may wish to consider examining the measurement invariance of even more varied special education categorizations (students with Autism Spectrum Disorders, students with Emotional Disturbances, etc.) in order to understand the applicability of the SEHS–S to those populations. Until then, mean differences found on the survey for those groups should be interpreted with caution. It would also be useful to understand if the patterns of lower *belief in self* and lower *emotional competence* persist across those groups as well, as they also represent vulnerable groups of students in a school setting.

Limitations

There are significant limitations to be noted with this study. First, determining membership of the LD group is a noted challenge, as the researchers had limited knowledge of the classification methods used to initially classify students as LD. As each participating school's methods of LD identification and individual psychoeducational profile analysis of the participants is beyond the scope of this study, the categorization of LD was simply gathered using the variable entered in each school's database. This limitation was noted by the current researcher, as well as many others engaged in the study of the population of

students with LD (Buttner & Hasselhorn, 2011). Within this study, there was also no way to account for the length of time a student has spent receiving special education services, how often they receive those services, and the degree to which their LD impacts their academic functioning.

Also, it is presumed that participants differ in terms of how often and for how long they receive special education services throughout the school day, and services may include social skill development and mental health services; supplemental services may obscure the true and natural differences between these groups. Additionally, there is likely significant variation among the quality of instruction in each special education classroom. Some students may have been exposed to stronger programming and more effective LD interventions throughout their academic career, while others have not. This is a potential limitation as a more supportive, effective special education classroom would likely enhance students' feelings of school support and self-efficacy, among other strengths, which may result in different student self-report of strengths. If their special education interventions are effective, one would assume that the students are experiencing greater success in school, and therefore showing greater strengths, and vice versa.

Another limitation of the study is the unavailability of information on whether or not any student participants (both general education and LD) were receiving counseling services or other mental health supports. The provision of supplemental mental health services could be a confounding factor in measuring the differences between LD and non-LD students. Service provision would be an important factor to control for in the measurement of social-emotional health, that is, accounting for whether students had received counseling services, which could impact their self-report of personal strengths if they have already received

intervention targeting their social emotional health. Additionally, the schools used in these analyses were all from a similar geographic region, and were schools with a majority Latino/a student population. Further studies may wish to examine populations with different ethnic compositions across varying geographic regions.

Conclusion

In order for educators to best assist this vulnerable group of the student population, having accurate measures of LD students' social-emotional health is a necessary step towards the best service provision. This examination of the SEHS–S tool provides validity evidence in support of the use of this instrument with the LD student population, as well as provides information regarding the differences between LD and non-LD students' social-emotional health profiles, so as to inform more targeted intervention services. Moreover, strengths-based measurement may be preferable for students with LD, who are accustomed to having only their challenges identified and remediated. The results of this study replicates prior research demonstrating that students with LD report lower capacities with respect to belief in themselves and overall *emotional competence*. Sustained deficits in these areas have detrimental short- and long-term outcomes. These are areas that can be targeted for enhancement and skill-building within a school context, in an effort to help all students thrive.

References

Adams, J. M. (October 25, 2015). California Students with dyslexia gain ground with new law. *EdSource.* Retrieved from: http://edsource.org/2015/california-students-with-dyslexia-gain-ground-with-new-law/89368

Aldao, A. (2013). The future of emotion regulation research: Capturing context. *Perspectives on Psychological Science, 8*(2),155–172. doi:10.1177/1745691612459518.

American Psychiatric Association. (2013). *(DSM-V) Diagnostic and statistical manual of mental disorders* (5th ed.) Washington, DC: American Psychiatric Press.

Annamma, S. A. (2014). Disabling juvenile justice: Engaging the stories of incarcerated young women of color with disabilities. *Remedial and Special Education*, *35*(5), 313–324. doi:10.1177/0741932514526785

Annunziata, D., Hogue, A., Faw, L., & Liddle, H. A. (2006). Family functioning and school success in at-risk, inner-city adolescents. *Journal of Youth and Adolescence, 35*(1), 105–113. doi:10.1007/s10964-005-9016-3

Anthony, E. K., & Stone, S. I. (2010). Individual and contextual correlated of adolescent health and well-being. *Families in Society, 91*, 225–233. doi:10.1606/1044-3894.3999

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.

Barry, C., & Wentzel, K. R. (2006). The influence of middle school friendships on prosocial behavior: A longitudinal study. *Developmental Psychology, 42,* 153–163. doi:10.1037/0022-0663.96.2.195

Bassi, M., Steca, P., Delle Fave, A., & Vittorio Caprara, G. (2007). Academic self-efficacy beliefs and quality of experience in learning. *Journal of Youth Adolescence, 36*, 301–312. doi:10.1007/s10964-006-9069-y

Battistich, V., Solomon, D., Kim, D., Watson, M., & Schaps, E. (1995). Schools as communities, poverty levels of student populations, and students' attitudes, motives, and performance: A multilevel analysis. *American Educational Research Journal, 32,* 627–658. doi:10.3102/00028312032003627

Bauminger, N., & Kimhi-Kind, I. (2008). Social information processing, security of attachment, and emotion regulation in children with learning disabilities. *Journal of Learning Disabilities*, *41*(4), 315–332. doi:10.1177/0022219408316095

Bear, G. G., & Duquette, J. F. (2008, October). *Fostering self-discipline*. Retrieved from http://www.nasponline.org/resources/principals/nassp_fosteringselfdiscipline.pdf

Brown, T.A. (2006) *Confirmatory Factor Analysis for applied research.* New York, NY: Guilford.

Buhs, E. S., & Ladd, G. W. (2001). Peer rejection as an antecedent of young children's school adjustment: An examination of mediating processes. *Developmental Psychology, 37,* 550–560. doi:10.1037/0012-1649.37.4.550

Buckner, J. C., Mezzacappa, E., & Beardslee, W. R. (2003). Characteristics of resilient youths living in poverty: The role of self-regulatory processes. *Development and Psychopathology, 15*, 139–162. doi:10.1017.S0954579403000087

Büttner, G., & Hasselhorn, M. (2011). Learning disabilities: Debates on definitions, causes, subtypes, and responses. *International Journal of Disability, Development and Education, 58*(1), 75–7. doi:10.1080/1034912X.2011.548476

Byrne, B. M., & Campbell, T. L. (1999). Cross-cultural comparisons and the presumption of equivalent measurement and theoretical structure: A look beneath the surface. *Journal of Cross cultural Psychology, 30,* 555–574.

doi:10.1177/0022022199030005001

Caraway, K., Tucker, C. M., Reinke, W. M., & Hall, C. (2003). Self-efficacy, goal orientation, and fear of failure as predictors of school engagement in high school students. *Psychology in the Schools, 40*(4), 417–427. doi:10.1002/pits.10092

Carver, C. S., Scheier, M. F., Segerstrom, S. C. (2010). Optimism. *Clinical Psychology Review, 30,* 879–889. doi:10.1016/j.cpr.2010.01.006

Centers for Disease Control and Prevention. (2009). *School connectedness: Strategies for increasing protective factors among youth.* Atlanta, GA: U.S. Department of Health and Human Services.

Chen, F. (2008). What happens if we compare chopsticks with forks? The impact of making inappropriate comparisons in cross-cultural research. *Journal of Personality & Social Psychology, 95,* 1005–1018. doi:10.1037/a0013193

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, *9,* 233–255. doi:10.1207/S15328007SEM0902_5

Collaborative for Academic, Social, and Emotional Learning. (2006). www.casel.org

Cortiella, C., & Horowitz, S.H. (2014). *The state of learning disabilities: Facts, trends and emerging issues.* New York, NY: National Center for Learning Disabilities.

Cox, K. F. (2006). Investigating the impact of strength-based assessment on youth with emotional or behavioral disorders. *Journal of Child and Family Studies, 15*, 287–301. doi:10.1007/s10826-006-9021-5

Crockett, L., Losoff, M., & Petersen, A. C. (1984). Perceptions of the peer group and friendship in early adolescence. *Journal of Early Adolescence, 4*, 155–181.

doi:10.1177/0272431684042004

Decety, J., & Jackson, P. L. (2004). The functional architecture of human empathy. *Behavioral and Cognitive Neuroscience Reviews, 3*(2), 71–100. doi:10.1177/1534582304267187

Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long–term goals. *Journal of Personality and Social Psychology*, 92(6), 1087–1101. doi:10.1037/0022-3514.92.6.1087

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta‐analysis of school‐based universal interventions. *Child Development, 82*(1), 405–432. doi:10.1111/j.1467-8624.2010.01564.x

Elbaum, B., & Vaughn, S. (2003). For which students with learning disabilities are self-concept interventions effective? *Journal of Learning Disabilities, 36*(2), 101–108. doi:10.1177/002221940303600203

Epstein, J. L. (1983). The influence of friends on achievement and affective outcomes. In J. L. Epstein & N. Karweit (Eds.), *Friends in school* (pp. 177–200). New York, NY: Academic Press.

Ey, S., Hadley, W., Allen, D. N., Palmer, S., Klosky, J., Deptula, D., … Cohen, R. (2005). A new measure of children's optimism and pessimism: The Youth Life Orientation Test. *Journal of Child Psychology and Psychiatry, 46*(5), 548–558. doi:10.1111/j.1469-7610.2004.00372.x

Forgeard M. J. C., & Seligman, M. E. P. (2012). Seeing the glass half full: A review of the causes and consequences of optimism. *Pratiques Psychologiques, 18*, 107–120.

doi:10.1016/j.prps.2012.02.002

Furlong, M. J., Froh, J. J., Muller, M. E., & Gonzalez, V. (2013). The role of gratitude in fostering school bonding. In D. J. Shernoff & J. Bempechat (Eds.), *National Society for the Study of Education yearbook: Engaging youth in schools: Empirically-based model to guide future innovations* (pp. xxx-xxx). New York, NY: Teachers College Record.

Furlong, M. J., You, S., Renshaw, T. L., Smith, D. C., & O'Malley, M. D. (2013). Preliminary development and validation of the Social and Emotional Health Survey for secondary students. *Social Indicators Research, 117,* 1011–1032. doi:10.1007/s11205-013-0373-0

Galyon, C. E., Blondin, C. A., Yaw, J. S., Nalls, M. L., & Williams, R. L. (2012). The relationship of academic self-efficacy to class participation and exam performance. *Social Psychology of Education, 15*, 233–249. doi:10.1007/s11218-011-9175-x

Gross, J. J. (2008). Emotion regulation. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *The handbook of emotions* (pp. 497–512). New York, NY: Guilford.

Greenberg, M. T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., Resnik, H., … last author (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist, 58,* 466–474. doi:10.1037/0003-066X.58.6-7.466

Greenspoon, P. J., & Saklofske, D. H. (1997). Validity and reliability of the Multidimensional Students' Life Satisfaction Scale with Canadian children. *Journal of Psychoeducational Assessment, 15,* 138-155. doi:10.1177/073428299701500204

Gregory, A., & Weinstein, R. S. (2004). Connection and regulation at home and in school:

Predicting growth in achievement for adolescents. *Journal of Adolescent Research, 19*(4), 405–427. doi:10.1177/0743558403258859

Henden, E. (2008). What is self-control? *Philosophical Psychology, 21*(1), 69–90. doi:10.1080/09515080701874092

Henderson, A., & Berla, N. (1994). *A new generation of evidence: The family is critical to student achievement.* Washington, DC: National Committee for Citizens in Education.

Hessler, D. M., & Katz, L. F. (2010). Brief report: Associations between emotional competence and adolescent risky behavior. *Journal of Adolescence, 33,* 241246. doi:10.1016/j.adolescence.2009.04.007

Huebner, E. S. (1991). Initial development of the Student's Life Satisfaction Scale. *School Psychology International, 12*, 231–240. doi:10.1177/0143034391123010

Huebner, E. S. (1994). Preliminary development and validation of a Multidimensional Life Satisfaction Scale for children. *Psychological Assessment, 6*, 149–158. doi:10.1037/1040-3590.6.2.149

Huebner, E. S., Laughlin, J. E., Ash C., & Gilman, R. (1998). Further validation of the Multidimensional Students' Life Satisfaction Scale. *Journal of Psychological Assessment, 16,* 118–134. doi:10.1177/073428299801600202

Idan, O., & Margalit, M. (2014). Socioemotional self-perceptions, family climate, and hopeful thinking among students with learning disabilities and typically achieving students from the same classes. *Journal of Learning Disabilities*, *47*(2), 136–152. doi:10.1177/0022219412439608

Individuals with Disabilities Education Improvement Act. (2004). (IDEA), Pub. L. No. 108-446, 18 Stat. 2647 (2004), [Amending 20 U.S.C. § §1400 et seq.].

Jenkins, L. N., & Demaray, M. K. (2012). Social support and self-concept in relation to peervictimization and peer aggression. *Journal of School Violence, 11*, 56–74. doi:10.1080/15388220.2011.630958

Johnson, E. S., Humphrey, M., Mellard, D. F., Woods, K., & Swanson, H. L. (2010). Cognitive processing deficits and students with specific learning disabilities: A selective meta-analysis of the literature. *Learning Disability Quarterly, 33*(1), 3–18. doi:10.1177/073194871003300101

Josephson, M., & Vingård, E. (2007). Zest for work? Assessment of enthusiasm and satisfaction with the present work situation and health–A 1.5-year follow-up study. *Work: A Journal of Prevention, Assessment and Rehabilitation*, *29*(3), 225–231.

Juvonen, J., & Espinoza, E., & Knifsend, C. (2012). The role of peer relationships in student academic and extracurricular engagement. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook on student engagement* (pp. 387–401). New York, NY: Springer.

Kavale, K. A., Spaulding, L. S., & Beam, A. P. (2009). A time to define: Making the specific learning disability definition prescribe specific learning disability. *Learning Disability Quarterly, 32*(1), 39–48. doi:

Keyes, C. L. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, volume, 207–222. doi:10.2307/3090197

Kubzansky, L. D., Sparrow, D., Vokonas, P., & Kawachi, I. (2001). Is the glass half empty or half full? A prospective study of optimism and coronary heart disease in the normative aging study. *Psychosomatic Medicine, 63*(6), 910–916. doi:10.1097/00006842-200111000-00009

Lackaye, T. D., & Margalit, M. (2006). Comparisons of achievement, effort, and self-perceptions among students with learning disabilities and their peers from different achievement groups. *Journal of Learning Disabilities, 39*(5), 432–446. doi:10.1177/00222194060390050501

LeBuffe, P. A., & Shapiro, V. A. (2004). Lending "strength" to the assessment of preschool social-emotional health. *The California School Psychologist, 9,* 51–61. doi:10.1007/BF03340907

Lenzi, M., Dougherty, D., Furlong, M. J., Sharkey, J., & Dowdy, E. (2015). The configuration protective model: Factors associated with adolescent behavioral and emotional problems. *Journal of Applied Developmental Psychology*, *38*, 49–59. doi:10.1016/j.appdev.2015.03.003

Lenzi, M., Furlong, M. J., Dowdy, E., Sharkey, J., Gini, G., & Altoè, G. (2015). The quantity and variety across domains of psychological and social assets associated with school victimization. *Psychology of Violence, 5*(4), 411–421. doi:10.1037/a0039696

Ma, M., Kibler, J. L., & Sly, K. (2013). Gratitude is associated with greater levels of protective factors and lower levels of risks in African American adolescents. *Journal of Adolescence*, *36*(5), 983–991. doi:10.1016/j.adolescence.2013.07.012

MacMillan, D. L., Gresham, F. M., Lopez, M. F., & Bocian, K. M. (1996). Comparison of students nominated for prereferral interventions by ethnicity and gender. *The Journal of Special Education, 30,* 133–151. doi:10.1177/002246699603000202

Margalit, M. (2004). Second-generation research on resilience: social-emotional aspects of children with learning disabilities. *Learning Disabilities Research & Practice*, *19*(1), 45–48. doi:10.1111/j.1540-5826.2004.00088.x

McCullough, M. E., Emmons, R. A., & Tsang, J. (2002). The grateful disposition: A conceptual empirical topography. *Journal of Personality and Social Psychology, 82*, 112–127. doi:10.1037/0022-3514.82.1.112

McNamara, J. K., & Willoughby, T. (2010). A longitudinal study of risk-taking behavior in adolescents with learning disabilities. *Learning Disabilities Research & Practice*, *25*(1), 11–24. doi:10.1111/j.1540-5826.2009.00297.x

Meade, A. W., Johnson, E. C., & Braddy, P. W. (2008). Power and sensitivity of alternative fit indices in tests of measurement invariance. *Journal of Applied Psychology*, *93*(3), 568. doi:10.1037/0021-9010.93.3.568

Moretti, E. (2005). Does education reduce participation in criminal activities? In H. M. Levin (Chair), *Symposium on the social costs of inadequate education conducted at Teachers College*. New York, NY: Columbia University.

Morrison, G. M., & Cosden, M. A. (1997). Risk, resilience, and adjustment of individuals with learning disabilities. *Learning Disability Quarterly*, *20*(1), 43–60. doi:10.2307/1511092

Muennig, P. (2005). Health returns to education interventions. In H. M. Levin (Chair), *Symposium on the social costs of inadequate education conducted at Teachers College.* New York, NY: Columbia University.

Murphy, B. C., Shepard, S. A., Eisenberg, N., & Fabes, R. (2004). Concurrent and across time prediction of young adolescents' social functioning: The role of emotionality and regulation. *Social Development, 13*(1), 56–86. doi:10.1111/j.1467-9507.2004.00257.x

Muthén, L. K., & Muthén, B. O. (1998-2012). *Mplus user's guide* (7th ed.). Los Angeles, CA:

Muthén & Muthén.

National Advisory Committee on Handicapped Children (NACHC). (1968). *First annual report, special education for handicapped children.* Washington, DC: Department of Health, Education, & Welfare.

Nese, R. N., Doerner, E., Romer, N., Kaye, N. C., Merrell, K. W., & Tom, K. M. (2012). Social Emotional Assets and Resilience Scales: Development of a strength-based short-form behavior rating scale system. *Journal for Educational Research Online*, *4*(1), 124–139.

Oswald, D. P., Best, A. M., Coutinho, M. J., & Nagle, H. A. L. (2003). Trends in the special education identification rates of boys and girls: A call for research and change. *Exceptionality, 11*(4), 223–237. doi:10.1207/S15327035EX1104_3

Park, N., & Peterson, C. (2006b). Moral competence and character strengths among adolescents: The development and validation of the Values in Action Inventory of Strengths for Youth. *Journal of Adolescence, 29*, 891–909. doi:10.1016/j.adolescence.2006.04.011

Perez, B., Skiba, R., & Chung, C. (2008). Latino students and disproportionality in special education. *Center for Evaluation and Education Policy 6*(2). Pages?

Peterson, C., Ruch, W., Beermann, U., Park, N., & Seligman, M. E. P., (2007), Strengths of character, orientations to happiness, and life satisfaction. *The Journal of Positive Psychology*, 2(3), pages. doi:10.1080/17439760701228938

Quinn, M. M., Rutherford, R. B., Leone, P. E., Osher, D. M., & Poirier, J. M. (2005). Youth with disabilities in juvenile corrections: A national survey. *Exceptional Children, 71*, 339–345. doi:10.1177/001440290507100308

Reschly, A. L., Huebner, E. S., Appleton, J. J., & Antaramian, S. (2008). Engagement as flourishing: The contribution of positive emotions and coping to adolescents' engagement at school and with learning. *Psychology in the Schools, 45*, 419–431. doi:10.1002/pits.20306

Rouse, C. E. (2005). The labor market consequences of an inadequate education. In H. M. Levin (Chair), *Symposium on the social costs of inadequate education conducted at Teachers College*. New York, NY: Columbia University.

Sameroff, A. J., Seifer, R., Baldwin, A., & Baldwin, C. (1993). Stability of intelligence from preschool to adolescence: The influence of social and family risk factors. *Child Development, 64,* 80–97. doi:10.2307/1131438

Sansone, R. A., & Sansone, L. A. (2010). Gratitude and well being: The benefits of appreciation. *Psychiatry (Edgmont)*, *7*(11), 18.

Scales, P. C., Benson, P. L., Roehlkepartain, E. C., Sesma, A., Jr., & van Dulmen, M. (2006). The role of developmental assets in predicting academic achievement: A longitudinal study. *Journal of Adolescence, 29*, 691–708. doi:10.1016/j.adolescence.2005.09.001

Scanlon, D. (2013). Specific learning disability and its newest definition: Which is comprehensive and which is insufficient? *Journal of Learning Disabilities, 46*(1), 26–33. doi:10.1177/0022219412464342

Schelble, J. L., Franks, B. A., & Miller, M. D. (2010). Emotion dysregulation and academic resilience in maltreated children. *Child Youth Care Forum, 39,* 289–303. doi:0.1007/s10566-010-9105-7

Schmitt, N., & Kuljanin, G. (2008). Measurement invariance: Review of practice and implications. *Human Resource Management Review, 18*(4), 210–222.

doi:10.1016/j.hrmr.2008.03.003

Schneider, B. H.,Wiener, J., & Murphy, K. (1994). The giant step beyond peer acceptance. *Journal of Social and Personal Relationships, 11*, 323–340. doi:10.1177/0265407594113001

Schunk, D. H., & DiBenedetto, M. K. (2014). Academic self-efficacy. In M. J. Furlong, R. Gilman, & E. S. Huebner (Eds.), *Handbook of positive psychology in Schools* (2nd ed., pp. 115-130). New York, NY: Routledge.

Schunk, D. H., & Zimmerman, B. J. (1997). Social origins of self-regulatory competence. *Educational Psychologist*, *32*(4), 195–208. doi:10.1207/s15326985ep3204_1

Shaywitz, S., Towle, V., Keese, D., & Shaywitz, B. (1990). Prevalence of dyslexia in boys and girls in an epidemiologic sample. *Journal of the American Medical Association, 264,* 143–157. doi

Shetgiri, R., Lin, H., Avila, R. M., & Flores, G. (2012). Parental characteristics associated with bullying perpetration in US children aged 10 to 17 Years. *American Journal Of Public Health, 102*(12), 2280–2286. doi:10.2105/AJPH.2012.300725

Shochet, I. M., Smith, C. L., Furlong, M., & Homel, R. (2011). A prospective study investigating the impact of school belonging factors on negative affect in adolescents. *Journal of Clinical Child & Adolescent Psychology, 40,* 586–595. doi:10.1080/15374416.2011.581616

Sideridis, G. D. (2007). Why are students with LD depressed? A goal orientation model of depression vulnerability. *Journal of Learning Disabilities, 40*(6), 526–539. doi:10.1177/00222194070400060401

Skrtic, T. M. (2005). A political economy of learning disabilities. *Learning Disability*

Quarterly, 28(2), 149–155. doi:10.2307/1593616

Spaulding, L. S. (2010). Determining best practices and interventions in special education. *Liberty University Faculty Publication and Presentations*, 144.

Spriggs, A. L., Iannotti, R. J., Nansel, T. R., & Haynie, D. L. (2007). Adolescent bullying involvement and perceived family, peer and school relations: Commonalities and differences across race/ethnicity. *Journal of Adolescent Health, 41*(3), 283–293. doi:10.1016/j.jadohealth.2007.04.009

Stadler, C., Feifel, J., Rohrmann, S., Vermeiren, R., & Poustka, F. (2010). Peer-victimization and mental health problems in adolescents: Are parental and school support protective? *Child Psychiatry and Human Development, 41*(4), 371–386. doi:10.1007/s10578-010-0174-5

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, *52*(6), 613. doi:10.1037/0003-066X.52.6.613

Sulkowski, M. L. Demaray, M. K., & Lazarus, P. J. (2012). A little help from my friends: Creating socially supportive schools. *Communiqué, 41*(2).

Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality, 72*(2), 271–322. doi:10.1111/j.0022-3506.2004.00263.x

Tanigawa, D. A., Furlong, M. J., Felix, E. D., & Sharkey, J. D. (2011). The protective role of perceived social support against the manifestation of depressive symptoms in peer victims. *Journal of School Violence, 10,* 393–412. doi:10.1080/15388220.2011.602614

Terras, M. M., Thompson, L. C., & Minnis, H. (2009). Dyslexia and psycho-social

functioning: An exploratory study of the role of self-esteem and understanding. *Dyslexia*, *15*(4), 304–327. doi:10.1002/dys.386

Truscott, S. D., Catanese, A. M., & Abrams, L. M. (2005). The evolving context of special education classification in the United States. *School Psychology International, 26*, 162–177. doi:10.1177/0143034305052911

U.S. Department of Education. (2009). *31st Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act.* Retrieved from http://www2.ed.gov/about/reports/annual/osep/2009/parts-b-c/31st-idea-arc.pdf

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods, 3*(1), 4-69. doi:10.1177/109442810031002

Wang, M. C., Haertel, G. D., & Walberg, H. J. (1997). *Fostering educational resilience in inner-city schools*. Publication Series No. 4.

Wei, M., Liao, K. Y., Ku, T., & Shaffer, P. A. (2011). Attachment, self-compassion, empathy, and subjective well-being among college students and community adults. *Journal of Personality, 79*(1), 191–221. doi:10.1111/j.1467-6494.2010.00677.x

Wentzel, K. R. (1999). Social-motivational processes and interpersonal relationships: Implications for understanding motivation at school. *Journal of Educational Psychology, 91*(1), 76–97. doi:10.1037/0022-0663.91.1.76

Wentzel, K., Baker, S., & Russell, S. (2009). Peer relationships and positive adjustment at school. *Handbook of Positive Psychology in Schools* (pp. 229–243). New York, NY: Routledge

Wiener, J. (2003). Resilience and multiple risks: A response to Bernice Wong. *Learning Disabilities Research & Practice*, *18*(2), 77–81. doi:10.1111/1540-5826.00061

Wiener, J., Harris, P. J., & Shirer, C. (1990). Achievement and social behavioral correlates of peer status in LD children. *Learning Disabilities Quarterly, 13*, 114–127. doi:10.2307/1510655

Wiener, J., & Tardif, C. (2004). Social and emotional functioning of children with learning disabilities: Does special education placement make a difference? *Learning Disabilities Research and Practice, 19*(1), 20–32. doi:10.1111/j.1540-5826.2004.00086.x

Williams, S., Anderson, J., McGee, R., & Silva, P. A. (1990). Risk factors for behavioral andemotional disorder in preadolescent children. *Journal of the American Academy of Child and Adolescent Psychiatry, 29,* 413–419. doi:10.1097/00004583-199005000-00013

World Health Organization. (1992). *The ICD-10 classification of mental and behavioral disorders: Clinical descriptions and diagnostic guidelines*. Geneva, Switzerland: Author.

You, S., Furlong, M. J., Dowdy, E., Renshaw, T. L., Smith, D. C., & O'Malley, M. D. (2014). Further validation of the Social and Emotional Health Survey for high school students. *Applied Research in Quality of Life, 9*, 997–1015. doi:10.1007/s11482-013-9282-2

You, S., Furlong, M., Felix, E., & O'Malley, M. (2015). Validation of the Social and Emotional Health Survey for five sociocultural groups: Multigroup invariance and latent mean analyses. *Psychology in the Schools*, *52*(4), 349–362.

doi:10.1002/pits.21828

Zimmerman, B. J. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal*, *45*(1), 166–183. doi:10.3102/0002831207312909